Food Thrift Series—No. 1.

HELP FEED YOURSELF

Make Home Gardens and Back Yards Productive

MAKE EVERY SQUARE YARD OF FERTILE, SUNNY SOIL PRODUCE FOOD FOR YOUR FAMILY.

Make your ground work for you and the Nation. Idle ground is waste; this is no time for waste or idleness.

IF YOU CAN'T RAISE ALL YOUR OWN VEGETABLES, AT LEAST RAISE SOME.

All idle ground utilized in the production of vegetables means more food for those who have no ground at all.

You can raise some vegetables for your family, no matter how small a piece of ground you have

Somebody Has to Raise Everything You Eat—Do Your Share

KEEP YOUR SOIL WORKING ALL SEASON.

1. Keep your garden working all season. Hasten early crops by starting seed in boxes in the house, in hotbeds and cold frames if the weather prevents outdoor planting.
2. Get your ground ready for planting as soon as the soil is dry enough to work.
3. Plant for early crops as soon as the weather permits. Make successive plantings of lettuce, radishes, beans, and other short-season crops.
4. Start new crops between the rows of plants that are soon to be removed.
5. As fast as the ground is cleared of one crop start a new crop.
6. See that your garden toward fall is full of potatoes, beets, turnips, cabbage, and other staple foods that can be stored for the winter.

YOUR CHILDREN, TOO, CAN HELP.

Boys and girls can help to make the soil in your gardens, back yards, and vacant lots produce food for the family. Last year they raised in their gardens and helped to can more than 4,000,000 packages of valuable food.

SAVE ALL SURPLUS FRUITS AND VEGETABLES.

If your garden at any time produces more than you can use immediately, do not allow the surplus to spoil.

Can surplus beans, peas, corn, tomatoes, beets, spinach, pumpkin, and squash for winter use.

Can or preserve apples, peaches, pears, cherries, quinces, berries, and other cultivated and wild fruits.

Every can of vegetables or fruit and every jar of preserved food means that you have saved food materials that would have otherwise been wasted.

Can or store root crops, cabbage, and other vegetables properly so that they will keep well and supply you with food when the garden ceases to produce.

LEARN HOW TO GROW AND CAN VEGETABLES.

The U. S. Department of Agriculture or your State agricultural college or county agent will give you explicit directions for raising vegetables, and will tell you simple methods for canning vegetables and fruit at home with ordinary home utensils.

DEMONSTRATE THRIFT IN YOUR HOME

MAKE SAVING, RATHER THAN SPENDING, YOUR SOCIAL STANDARD

U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

91651°—1

STOP FOOD WASTE.

Much of the $700,000,000 Annual Waste in Homes Caused by Careless Handling, Improper Cooking, etc.

GOOD FOOD IS WASTED—

If it gets into the garbage pail.
If allowed to spoil in the home.
If ruined by careless cooking.
By careless paring and trimming.
When too much is served at a meal.

Good food heedlessly thrown into garbage pails, food allowed to spoil in the household, food ruined by improper cooking, and food destroyed by rats, mice, and insects constitute the heavy items in the $700,000,000 annual waste of food in homes in this country cited recently by the Secretary of Agriculture. Seven hundred million dollars is considered to be a conservative figure. In household waste, of course, are not included the vast losses of food allowed under improper handling or inefficient marketing methods to spoil in transit or in the hands of producers or dealers.

Much of this $700,000,000 household waste of food, the dietary specialists of the United States Department of Agriculture declare, is easily preventable. This preventable waste consists in large part of the following items:

(1) *Edible food thrown into the garbage pail or into the kitchen sink.*—That vast amounts of nourishing material are thrown out from American kitchens and so made useless for human consumption, is well established by the returns from garbage and fertilizer plants showing the amount of fats and nitrogenous material recovered from city garbage.

Much of the food is thrown out, the specialists say, because so many people do not know how to utilize "left overs" or will not take the trouble to keep and prepare them. The specialists point out that left-over cereals can be reheated or combined with fruits, meats, or vegetables into appetizing side dishes; that even a spoonful of cereal is worth saving as a thickener of soups, gravies, and sauces. Stale bread can be utilized in a variety of ways in combination with vegetables and meats and in preparing hot breads and puddings. Skim milk, too widely looked down upon as a food, although it contains practically all the nourishing elements of whole milk with the exception of the cream or fat, can be used as a beverage, in cooking cereals, or as a basis for milk soups or sauces. Even sour milk, so largely thrown away, can be used in making hot breads or in the home manufacture of cottage cheese.

Every scrap of meat or fish can be combined with cereals or other foods lacking in pronounced flavor, both to give flavor and to add nourishment to made-over dishes. Every bit of fat or suet trimmed from meat before cooking or tried out in boiling, roasting, or broiling can be made useful in cooking. Many butchers, after they have weighed meat and named the price for the cut, trim off valuable suet and fat. This fat, which the housewife pays for, if taken home and used, would reduce expenditures for prepared cooking fats. Water used in cooking rice and many of the vegetables contains nutrients and desirable flavoring materials valuable in soups or sauces. Too often fats and such water are poured into the sink.

Many persons regard the saving of small amounts of left-over food as unimportant. If they kept accurate account, however, for any period, the specialists say, many families would be astounded by the amount of good food they are throwing out and by the sums that they are paying to the grocer, the butcher, and milkman merely to replace good food being absolutely wasted.

(2) *Spoilage of food due to careless handling and storing in the home.*—Important amounts of perishable foods are made dangerous or inedible in households because they are exposed unnecessarily to heat, germs, dust, dirt, or to flies and other insects.

Much milk spoils quickly because it is kept uncovered in warm kitchens. Close observance of the doctrine "Keep perishable food, especially milk, cool, clean, and covered continuously" may make a striking difference in the food bills of many families.

In other cases, one or two vegetables, beets or carrots, for instance, not needed immediately are thrown out or allowed to spoil instead of being used in soups or combination dishes. Fruits which could be stewed and kept are allowed to spoil. Vegetables and fruits in quantities often are stored in hot, damp, and poorly ventilated bins and under conditions which hasten wilting, fermentation, and decay. Fruits, surplus beans, tomatoes, and other vegetables produced in home gardens are allowed to spoil on the vines or rot on the ground. A morning's work would can and preserve such surplusage for use when fruits and vegetables are scarce and high in price.

Much food is ruined by being stored where flies or other insects, or rats and mice can get at it. Much cereal food is ruined because it is not protected against weevils or other insects.

(3) *Food spoiled by careless cooking.*—Many housewives who complain that children and adults will not eat breakfast cereals fail to realize that the cereals they serve are undercooked, scorched, or improperly seasoned, and thus made unpalatable. Most of the cheaper foods require careful seasoning and preparation to be fully appetizing. In many households, the specialists believe, proper attention to the cooking of these cheap and desirable foods will increase greatly their consumption and thus reduce considerably the use of more expensive foods eaten instead of cereals.

Vegetables properly prepared tempt the appetite. When they are served in soggy form or in watery or poorly flavored dishes, much of them will be left on the table. The nutritive value and flavor of meat or fish can be lessened by overcooking or improper cooking. If fats are allowed to burn even a little, they develop unpleasant flavors and usually cause people to refuse gravies and sauces made with them or foods fried in them; burned meat is also disagreeable, as are burned vegetables.

(4) *Waste in preparation.*—Much useful food gets into the garbage pail because the housewife in preparing potatoes or other vegetables and fruit, such as apples, cuts off with the skin a considerable percentage of edible material. Careless paring of potatos may consign as much as 20 per cent of the edible portion, including outer layers containing valuable mineral substances, to the garbage pail. Many persons are unaware that the green and tender tops of many vegetables which contain valuable mineral and other food substances, are excellent cooked as greens, or even as additions to salads.

(5) *Overgenerous serving of food.*—Many families take pride in serving lavish and overbountiful meals. Such meals lead inevitably to waste of food on the table and to overeating, which often impairs health and efficiency. The sane standard, "Eat enough food and no more," rigidly followed, would reduce greatly food bills in many homes and, at the same time, tend to improve the physical condition of all members of the household.

Eat for Efficiency.

Housewives interested in economy who wish to be certain that their families are getting proper food and not too much, should ask the United States Department of Agriculture to send Farmers' Bulletin 808, "How to Select Foods—What the Body Needs." This bulletin classifies foods into simple household groups and shows the housewife how to plan meals that will provide for the growth and repair of the body and supply the energy the various members of the household need for their special tasks.

MILK AS A FOOD.

Furnishes Nourishing Material at Relatively Low Cost—Comparison with Other Foods.

Economy in the diet does not always depend upon limiting the use of certain foods, but sometimes it is a question of actually increasing the use of foods which furnish nutritive material at relatively low cost. Milk belongs to the latter class, and the housewife would do well to study its food value and decide whether her family is using as much as it should. The average person in this country uses only a little more than a half pint of milk daily, and this quantity can very profitably be increased when safe milk is available.

Many people think of milk only as a beverage, but if they understood that it is in reality a nourishing food they would increase their daily allowance.

We eat foods for two main reasons: First, to renew body wastes and promote growth by forming new tissues and fluids; and, second, to supply energy for carrying on body functions. Milk contains the body-building materials (protein and mineral substances, such as lime and phosphorus) and also supplies energy for carrying on the body functions.

The following table, compiled by specialists of the United States Department of Agriculture, shows the quantities of various foods needed to supply as much protein or energy as 1 quart of milk.

PROTEIN.	ENERGY.
1 quart of milk:	1 quart of milk:
7 ounces of sirloin steak.	11 ounces of sirloin steak.
6 ounces of round steak.	12 ounces of round steak.
4.3 eggs.	8½ eggs.
8.6 ounces of fowl.	10.7 ounces of fowl.

Another method of comparison is shown by the table below, in which the relative

value of certain foods as economical sources of protein is given:

To supply protein at equal cost.

Milk at—	As cheap as—	
	Sirloin steak at—	Eggs at—
Cents a quart.	*Cents a pound.*	*Cents a dozen.*
7	16.3	17.6
8	18.6	20.1
9	21.0	22.6
10	23.3	25.1
12	27.9	30.2
15	34.9	37.7

According to this table, if milk is selling at 10 cents a quart sirloin steak must sell as low as 23.3 cents a pound and eggs at 25.1 cents a dozen to supply protein at equal cost.

To supply energy at equal cost.

Milk at—	As cheap as—	
	Sirloin steak at—	Eggs at—
Cents a quart.	*Cents a pound.*	*Cents a dozen.*
7	9.9	9.3
8	11.3	10.6
9	12.8	11.9
10	14.2	13.2
12	17.0	15.9
15	21.3	19.8

It can be seen, therefore, that milk, even at 15 cents a quart, is a cheap source of energy as compared with sirloin steak and eggs.

In comparing foods it is necessary to consider both the protein and the energy furnished. Neither one alone can properly be used as a basis of comparison, nor is there any correct way to reckon the value of a food by considering the total amount of nutritive elements.

It is very difficult to compare foods on the basis of the mineral matter they contain, but all physiologists agree that milk is extremely valuable from this standpoint. Indeed, it is the food prepared by nature, especially for growth and development of the young. A quart of milk a day is a good allowance for a young, growing child.

In addition to being an economical food, milk is usually easily digested and requires no cooking or other preparation for the table. Specialists of the department have found, also, that it is digested better when taken with other foods.

There are innumerable ways to use milk in cookery, such as in puddings, blancmange, soups, chowder, sauces, "junket," etc., and in all these ways it is both appetizing and nourishing.

CORN MEAL IN THE DIET.

Cheap Compared with Other Cereals—Has High Nutritive Value—May Be Served in Many Ways.

One way to reduce the cost of food for the family, say the specialists of the United States Department of Agriculture, is to use more corn meal, where this is low in price as compared with other cereals. Corn meal at present prices, when bought at retail stores, costs about half as much per pound as wheat flour, one-third as much as rolled oats, one-fourth as much as rolled wheat, and about half as much as broken rice. That is, it costs much less per pound than any of the other popular cereal foods, yet even the bolted corn meal usually sold, from which the germ of the grain has been removed to make the meal keep longer, has a food value which compares favorably with that of wheat flour. It does not supply quite so much protein or mineral matter for building the tissues of the body, but, on the other hand, it gives more fat and starch, pound for pound, and its value as fuel for the body is fully as high.

The old-fashioned unbolted corn meal made from the whole grain, which can often be obtained by the farmer who will take his grain to mill, and can often be purchased in shops and markets, contains more of the tissue-building material and has what many consider even a better flavor than the bolted meal and is much liked for making some forms of corn bread.

Any family in town or country can have the best of corn meal by grinding it at home in a hand gristmill. The city man can buy corn by the bushel at a grain store. He can grind it coarse or fine, to suit the taste of the family, and in quantities to last a day or a week or longer. Most people will agree that this meal containing the germ is very palatable and compares well in this respect with that ordinarily purchased ready ground. Prices of hand mills of substantial make run from $2.50 to $5. A small mill can be had for as little as $1.50, though this probably would prove too tedious to use, except for small quantities.

Whether obtained at the retail store, brought from a mill, or ground at home, corn meal can be used in several ways to give inexpensive variety to the diet.

A dish of mush and milk has made the greater part of many a supper on the farm, and children thrive on it, though they may rebel at cleaning the kettle and the "pudding spoon" afterwards, if the old-time methods of cooking it are followed. It is a simple dish to make—just 3½ cups of water and a teaspoon of salt to every cup of meal. The water can be put in cold and the vessel heated gradually. A double boiler is very convenient in cooking corn-meal mush, as well as all other cereals and is easier to clean. The great secret of good mush is long, slow cooking—the longer the better. A fireless cooker, in which the cooking can go on all day or all night, is very useful for this purpose.

For "quick action" in getting breakfast in the city flat, the corn meal and salt may be put in the double boiler, mixed with a little cold water, and then hot water may be added up to the required amount. If clean hot water is to be had from the spigot, a good corn-meal mush can be made in three-quarters of an hour. But corn meal can hardly be cooked properly in less time.

Corn-meal mush can be used in many other ways besides as a breakfast or supper dish. Fried mush, mush with fruit, and mush with cheese are in the list of recipes. Fish cakes with corn meal are good, and corn meal and meat of different kinds may be cooked together, "scrapple" being a favorite in some parts of the country.

Corn bread and corn griddle cakes are made in many ways, all good. Bread may be made of wheat flour and corn meal, half-and-half. Puddings and even doughnuts and cakes are made with corn meal as the basis.

Recipes for using corn meal in all these ways and others may be had from the United States Department of Agriculture upon request.

RICE IMPORTANT FOOD.

Nutritious, Palatable, and Easily Prepared—Economical Addition to Diet at Present Time.

Although rice has been recognized as a good food in the United States since early colonial times, and in some form or other is generally liked in all parts of the country, it has not been given so important a place as a staple article of diet as it deserves, say specialists of the United States Department of Agriculture.

In some sections rice has been used for the most part as a breakfast cereal or as a foundation for pancakes, croquettes, or desserts. In regions where it is grown, however, it is used principally as a vegetable like potatoes; and in place of dishes like macaroni and spaghetti combined with cheese, and similar foods. This use well may be extended to regions where rice is now used chiefly for making puddings and other desserts.

When rice is used in quantity in the diet, particularly as a substitute for potatoes, care should be taken to supply fruits and vegetables generously in order that the mineral substances which the body needs may be provided.

Rice is nutritious and palatable and digests well. It may be cooked quickly, without the necessity of troublesome preparation, and without waste. Taking everything into account, rice well may be given a more important place in the diet at this time, since a greater crop was produced in the United States last season than ever before. Late statistics place the 1916 crop at 40,702,000 bushels, against 28,947,000 bushels in 1915, and 25,265,600 bushels for the five-year average 1911 to 1915, inclusive. The world crop of rice also is greater than for many years. Rice ordinarily can be obtained at prices which make it, in comparison with other foods, a reasonably economical addition to the diet. With the present greatly increased stock of the domestic product in the country, even a somewhat increased demand should not alter greatly the relation of rice prices to those of comparable foods.

As a staple article of diet, rice may be boiled in salted water and used like potato or sweet potato as a vegetable at a meal at which meat, eggs, beans, gravy, or other foods rich in protein are served. Wholly or partially cooked rice can be used with cheese, minced meat, or poultry, fish, eggs, beans, etc., for a variety of made dishes, the combinations constituting dishes in which most of the needed food elements are present. It also may be used as a major or minor ingredient in stews and soups.

Instead of serving rice plain as a vegetable it may be stewed with tomatoes, cooked in a double boiler with tomato juice, soup stock, or milk, or it may be seasoned with curry powder, onions or other seasoning materials. By using skim milk in this way a partially economical dish is produced.

As a cereal for breakfast, rice may be boiled in milk and sweetened, or eaten with butter and salt. If it is desired, dried fruits such as dates or raisins may be cooked with the rice. Cold, boiled rice, mixed with pancake or muffin batters of wheat, buckwheat, or corn meal, makes a pleasing addition to such food products, reduces the quantities of other ingredients needed, and furnishes a method for using the left-over cereal. Cold, boiled rice also may be used with or without a little meat, chicken, or seasoning vegetable for croquettes; and with eggs, sugar, milk, or other ingredients for making a variety of puddings and other desserts, as an examination of almost any good cookbook will show.

WASTE NO FOOD——→

Food Waste of About 700 Million Dollars

"For partial immediate relief, every individual and community should consider earnestly the matter of food conservation and the limitation of waste. As a Nation we seem to have a disdain of economizing. In many homes there is a strong feeling that it is 'only decent' to provide more food than will be eaten and that it is demeaning to reckon closely. The experts of the Department of Agriculture report to me that the dietary studies made by them point to an annual food waste of about $700,000,000. Of course, the waste in families of very limited means is slight, but in the families of moderate and ample means the waste is considerable. Even if the estimate were reduced by half, the waste would still be enormous.

"The food waste in the household, the experts assert, results in large measure from bad preparation and bad cooking, from improper care and handling, and, in well-to-do families, from serving an undue number of courses and an over-abundant supply and failing to save and utilize the food not consumed. As an instance of improper handling, it is discovered that in the preparation of potatoes 20 per cent of the edible portion in many cases is discarded."—SECRETARY OF AGRICULTURE, March 3, 1917.

Food is wasted——→

(a) When we eat more food than our bodies need for growth and repair and to supply energy for our work. Overeating tends to poor health and fat instead of brawn, makes us sluggish and indolent instead of energetic and resourceful. Eat enough and no more. Eat for physical and mental efficiency.

(b) When food is burned or spoiled in cooking. Improperly prepared or poorly seasoned food will be left on the table and probably wasted. Buy food wisely and then prepare it carefully.

(c) When too much food is prepared for a meal. Unserved portions are apt to be thrown into the garbage pail or allowed to spoil. Many housekeepers do not know how to use left-over foods to make appetizing dishes.

(d) When too much food is served at a meal. Uneaten portions are left on the plate and later thrown into the garbage pail. Learn to know the needs of your family, and serve each no more than you think he will want.

(e) When anything edible is allowed to go to the garbage pail or allowed to spoil for lack of proper handling.

(f) When food is handled carelessly. Buy clean food, keep it clean until used, and be neat in all details of cooking and serving. This lessens waste and is a valuable health measure as well.

Feed Your Own Family First

Don't feed high-priced human food to hogs or chickens.
Don't send valuable food to the incinerator or the fertilizer heap.
Don't pour into the sewer nourishing food in the shape of milk, skim milk, sweet or sour, soup, gravy, or melted fat, or water in which cereals or vegetables have been cooked.
Keep good food out of your garbage pail and kitchen sink.

DEMONSTRATE THRIFT IN YOUR HOME

MAKE SAVING, RATHER THAN SPENDING, YOUR SOCIAL STANDARD

U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

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Food Thrift Series—No. 2.

WATCH YOUR KITCHEN WASTE

A large part of the $700,000,000 estimated food waste in this country is good food which is allowed to get into garbage pails and kitchen sinks

Ask Yourself—"Can It Be Eaten?"

Don't throw out any left overs that can be reheated or combined with other foods to make palatable and nourishing dishes.

Do You Know—

That every bit of uneaten cereal can be used to thicken soups, stews, or gravies?

That stale bread can be used as the basis for many attractive meat dishes, hot breads, and desserts?

That every ounce of skimmed milk or whole milk contains valuable nourishment? Use every drop of milk to drink or to add nourishment to cereals, soups, sauces, and other foods. If you do not want milk to sour, keep it cool, clean, and covered continually. Remember, too, that sour milk, buttermilk, and sour cream are valuable in cookery; so do not waste any. Sour milk and buttermilk can be used with soda in making hot breads, or sour milk can be turned easily into cottage cheese, cream cheese, or clabber. Sour cream is a good shortening in making cakes and cookies and useful for salad dressings and gravies for meat.

That every bit of meat and fish can be combined with cereals or vegetables for making meat cakes, meat or fish pies, and so on, and to add flavor and food value to made dishes?

Do You Know—

That every spoonful of left-over gravy can be used in soups and sauces or as flavoring for meat pies, croquettes, and vegetables?

That every bit of clean fat trimmed from meat and every spoonful of drippings and every bit of grease that rises when meat is boiled can be clarified, if need be, and is valuable in cookery? Don't fatten your garbage pail at the expense of your bank account.

That when meat is boiled, the water dissolves out some valuable food and flavoring material? Save such water for soup or for use in stews or gravies, or for cooking vegetables. Save and keep soup stock. Every professional cook knows that keeping a soup or stock pot is an essential economy.

Do You Know—

That valuable food and flavoring get into the water in which rice and many vegetables are cooked? Use such water for soup making if it has an agreeable flavor. Don't pour nourishment down the sewer.

That careless paring of potatoes or fruits often wastes as much as 20 per cent of their food material?

That the outside leaves of lettuce and the tops of many vegetables make desirable cooked "greens" or even salads?

To Be An Efficient Home Manager You Must Know Your Job

Make it your business to know what foods and how much food your family needs to be efficient. Learn how to make the most of the foods you buy.

Write to-day to the U. S. Department of Agriculture, Washington, D. C., or to your State agricultural college for bulletins telling you about the nature and uses of foods and how to feed your family economically, and get the greatest nourishment out of every pound of food that comes into your home.

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U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

92902°—17

housewife who decides to adopt improved methods should be to purchase a dairy thermometer. After the cream is mixed it should be kept at approximately 70° F. until just before churning time, when it should be reduced to about 58° F., where this is possible (or to such temperature not above 65° F. as to complete the operation of churning within 25 or 30 minutes).

Churning.

The barrel type has been found by dairy specialists to be one of the most satisfactory churns. The dasher or plunger type requires a somewhat greater expenditure of labor. Earthenware churns are especially undesirable unless perfectly glazed, since if pores are exposed they absorb milk and cream which later decay. Churns with mechanical devices inside them are difficult to clean and sometimes injure the body of the butter.

The churn should be scalded preparatory to churning, but should be cooled with water before the cream is placed inside. The cream should be poured in through a coarse strainer. Every few minutes during the early part of the churning gas should be allowed to escape from the churn. If the temperature is right the churning should require about 25 or 30 minutes. The process is complete when the granules of butter are about the size of large wheat kernels. The buttermilk should then be drained off and the butter granules repeatedly washed with cold water while still in the churn. The washings should be continued until all milk is removed. Under no circumstances should working be depended on to remove surplus milk.

Working and Packing.

When the butter is free from all milk it should be taken from the churn with a paddle and placed on a worker. The hands should never touch the butter, both on account of sanitary reasons and because the body warmth may melt the fat. The working should be done carefully to avoid making the butter greasy. Before the butter is worked, fine salt should be added at the rate of about one ounce per pound of fat.

The butter should be prepared for market in a rectangular mold, since, when in this shape, the product is more easily wrapped and handled and is more pleasing to customers. Regular parchment butter-wrapping paper should be used around the prints, as ordinary waxed paper tears easily and sticks to the butter. The placing of the wrapped prints in pasteboard boxes is a desirable final step, as it protects the package, gives it a better appearance, and permits the use of the maker's name or trademark as an advertisement.

After the butter-making operations are completed the churn should be rinsed carefully with warm water. It should then be scrubbed with hot water, cleansing powder, and a fiber brush, and finally should be scalded and set in a clean, sunny place to drain and dry.

ECONOMY IN FOOD FATS.

Price Differences Depend Chiefly on Flavor and Color—Food Value of All Practically Equal.

Flavor and color have an important bearing on the prices which must be paid for the various edible fats used in the home, since all are regarded as wholesome when of good quality and practically the same amount of energy is derived by the body from each. The housekeeper, therefore, must decide usually what she is willing to pay for relatively superficial properties in the foods. These facts are pointed out in a recent professional paper of the U. S. Department of Agriculture, Bulletin 469, Fats and Their Economical Use in the Home, prepared by the Office of Home Economics of the department. In discussing the selection of fats for special uses the bulletin says:

In general it pays always to buy fats of such good quality that none will have to be thrown away through spoilage. In some instances a higher-priced article may be more economical in the end, as, for example, clean, sanitary butter, as compared to a cheaper but less sanitary product. In some instances, where taste or flavor only is involved, a less expensive table fat may answer quite satisfactorily the purpose of a more expensive one. For example, the chief use of table oils is as an ingredient of salad dressings, and when a characteristic flavor is not especially desired good grades of cottonseed and peanut oils, having a bland flavor, may be used when these are less expensive than the corresponding grades of olive oil.

In selecting shortening fats, flavor and odor are to be considered, but attractive appearance and color are of less importance, since in cooking these are usually masked. Other qualities being equal, those culinary fats are more economical and desirable which possess the best keeping quality; that is, the least tendency to become rancid. Also, for general use shortening fats give the best results if they are neither too hard nor too soft to be easily mixed with the other ingredients of the dough at ordinary temperatures.

Fats used as a medium for cooking in such operations as frying should be carefully selected, since they influence the flavor, appearance, and texture of the foods cooked in them. Preference should be given to a fat which does not scorch too readily at the temperature most commonly used for frying. Butter and lard scorch at a lower temperature than beef or mutton fats and cottonseed, peanut, or coconut oils. For this reason the latter fats are preferable for deep frying, which requires high temperature.

Economical Use of Fats.

It is a waste, the bulletin points out, to use more fat than a good recipe calls for. It is more economical to stir butter into cooked vegetables just before they are served rather than while cooking, and the flavor thus imparted is more pronounced. Furthermore, if added before cooking much of the butter is lost unless the water in which the vegetables are boiled is served with them. Instead of adding butter to vegetables many people cook fat ham, bacon, or salt pork with them and relish the characteristic flavor thus imparted.

Saving Fats That Would be Thrown Away.

Much fat may be saved by home rendering of the trimmings from fat meat. The following method of rendering fats may be applied in the home: The fat is cut finely with an ordinary household meat chopper or sausage grinder and is then heated in a double boiler until completely melted. The melted fat is then strained through a rather thick cloth (medium fine huckaback, for instance) to remove the finely divided bits of tissue. The advantage of this method is that since the material to be rendered is finely divided the fat separates readily from the inclosing tissue at a temperature very little above its melting point, and there is no danger of scorching it as in the older open-kettle method.

After the fat is rendered it must usually be clarified. A fairly successful household method for clarifying fats is as follows: Melt the fat with at least an equal volume of water and heat for a short time at a moderate temperature, with occasional stirring. Let the mixture cool, remove the layer of fat, and scrape off bits of meat and other material which may adhere to the underside.

Undesirable odors and flavors can be decreased in intensity or removed, if not too pronounced, by heating the fats with a good grade of charcoal. To each pound of chopped, unrendered fat add 12 pieces of clean, hardwood charcoal about the size of a walnut and render the fat in a double boiler as described above. Allow the charcoal to remain in the melted fat for about two hours and stir the mixture occasionally. It is necessary to strain the fat through flannel or other closely woven cloth to remove all the fine particles of charcoal. Rancid odors, if not too pronounced, may be satisfactorily removed by this method. If the odor is very pronounced, more charcoal is needed, and the mixture requires longer heating. It is interesting to note that the characteristic yellow color of the beef fat may be removed by this method, and a white, odorless fat secured.

Fats as Food.

Fats are not less digestible than other foods, as is generally believed, it is pointed out by the bulletin, but are, as a matter of fact, more thoroughly digested than the ani-

mal or vegetable proteins and the starch occurring in the ordinary mixed diet. Fats whose melting points are higher than the body temperature are less easily digested, however, than those having low melting points. The digestive disturbances often attributed to eating fat are probably due not so much to the inability of the body to digest the fat itself as to other factors, among the chief of which are bad cooking, overeating of foods containing fats, and rancidity.

The number of edible fats in use has been greatly increased in recent years, the bulletin points out. Formerly butter, cream, and lard, and perhaps "meat drippings," were the only edible animal fats known to the average housewife. Now numerous cooking fats are made from vegetable oils or mixtures of vegetable and animal fats.

TO CAN FRUIT WITHOUT SUGAR.

Canning Specialists Say Boiling Water May Be Used Instead of Sirup.

Fruit for use in pies or salads or as stewed fruit can be canned without the use of sugar, according to the canning specialists of the department. Any fruit, they say, may be successfully sterilized and retained in the pack by simply adding boiling water instead of the hot sirup.

Canning Fruits Without Sirup.

Can the product the same day it is picked. Cull, stem, or seed, and clean the fruit by placing it in a strainer and pouring water over it until it is clean. Pack the product thoroughly in glass jars or tin cans until they are full; use the handle of a tablespoon, wooden ladle, or table knife for packing purposes. Pour over the fruit boiling water from a kettle, place rubbers and caps in position, partially seal if using glass jars, seal completely if using tin cans. Place the containers in a sterilizing vat, such as a wash boiler with false bottom, or other receptacle improvised for the purpose. If using a hot-water bath outfit, process for 30 minutes; count time after the water has reached the boiling point; the water must cover the highest jar in container. After sterilizing remove packs, seal glass jars, wrap in paper to prevent bleaching, and store in a dry, cool place.

If you are canning in tin cans it will improve the product to plunge the cans quickly into cold water immediately after sterilization. When using a steam pressure canner instead of the hot-water bath, sterilize for 10 minutes with 5 pounds of steam pressure. Never allow the pressure to go over 10 pounds.

HOW TO SELECT FOODS.

How the Housekeeper Can Provide a Ration That Will Give the Best Returns For the Money Spent.

Adults and children must get several different substances from the food they eat or they will miss something which is essential to bodily efficiency and health, according to the nutrition specialists of the United States Department of Agriculture. The housewife, therefore, who plans her meals or attempts to save money on food without some knowledge of these substances and of the five simple groups of foods which supply them is very liable to omit from her meals some food essential for the growth of children or necessary to supply the family with the energy they need for their daily tasks. Attempted economy which entirely omits certain foods may well prove a very poor investment because of its ultimate effect on the well-being of the household. Price, individual preference for certain foods, and even the fact that hunger is satisfied after a meal, are not safe guides. Tomatoes at 10 cents apiece in winter are no more nutritious than they are at 5 cents a quart in summer. A child might crave much more sugar than would be good for him. A bulky diet of potatoes or bananas might make a person feel he had eaten enough, but would not furnish him with the elememts that his body needs.

To plan out meals in the interest of family efficiency and economy at the same time, the housewife fortunately does not need to do elaborate sums in calories or to have any intimate understanding of such terms as "protein" and "carbohydrates." All she needs to do is to classify the food she uses into five simple household groups laid down in recently issued Farmers' Bulletin 808, published by the Office of Home Economics, United States Department of Agriculture. The purpose of the bulletin, which is the first of a series of simple pamphlets dealing with the economical use of foods, is to enable the average housewife to plan her meals effectively, even though she has no special training in chemistry or dietetics.

The substances which the specialists find are needed in the daily diet to maintain the body may be grouped under seven heads: Mineral substances, protein, starches, sugars, fats, cellulose, and certain little known but very important growth-stimulating substances.

A Day's Food Requirements.

That these essential substances are not difficult for the average housewife to provide is shown by the following combinations which the specialists believe indicate the daily food requirements of normal individuals:

FOR A MAN.

A man who does fairly hard muscular work would be likely to get the food which his body needs if supplied daily with such a combination of foods as the following:

One and one-fourth pound of bread (having about the same food value as 1 pound of such cereal preparations as wheat or rye flour, oatmeal, corn meal, rice, etc.).

Two ounces, or ¼ cup, of butter, oil, meat drippings, or other fat. Two ounces, or ¼ cup, of sugar; or ⅓ cup of honey, or sirup, or an equivalent amount of other sweet.

One and one-fourth pounds of food from the following: Fresh fruits and fresh or root vegetables.

Twelve ounces of food from a class which may be called "meats and meat substitutes"; that is, moderately fat meats, poultry, fish, eggs, cheese, dried legumes (beans, soy beans, peas, lentils, cowpeas, and peanuts). Milk also belongs among these foods, but because of the large amount of water it contains, half a glass, or 4 ounces, of it would be required to equal an ounce of any one of the others.

A man who works hard out of doors all day probably would need more food than this, and one who sits all day at his desk would need less. The amounts given are suitable for a man who, like a salesman in a store, walks about more or less and does more or less of such work as lifting.

FOR A FAMILY OF FIVE.

A family consisting of a man and a woman, who do moderately hard muscular work, and three children—say, between 3 and 12 years of age—would get the food they require if supplied daily with—

Four and one-half pounds of bread, having about the same food value as 3 pounds of wheat or rye flour, oat meal, corn meal, hominy, or rice; or about 2¾ pounds of such cereals and 5 or 6 medium-sized potatoes.

Three-fourths cup of fat (butter or butter with oil, beef drippings, or other fat)—a weekly allowance of 2½ to 3 pounds.

A little more than 1 cup of sugar, or a weekly allowance of 4 pounds; or an equivalent amount of some other sweet, such as 1¼ cups of sirup or honey a day, or ¾ pound of dried figs or raisins a day.

Four pounds in all of fresh fruits and fresh or root vegetables.

One of the two following, the choice depending on the age of the children:

Three quarts of milk and 1 pound of other foods taken from the meat and meat-substitute group.

Two quarts of milk and 1½ pounds of other foods taken from the meat and meat-substitute group.

Cereals Used Freely.

In these combinations of food, it will be noted, bread and other preparations of cereal food are used as freely as they conveniently can be, without making the ration one sided

or unattractive. A diet equal in nourishment might be planned with less cereal, but this would make it necessary to increase the amounts of more costly foods, such as meat, fruits and vegetables.

Cereals can be used freely without making the diet monotonous if they are served in a variety of forms and combined with other nutritious or flavoring materials, such as meat, cheese, onions, celery, tomatoes, and other vegetables and dried, cooked, or fresh fruits.

Sample Meals for a Family of Two Adults and Three Children.

The food materials indicated as being required may be combined into three meals in many ways. The following meals are given not because they are recommended above many others that might be prepared, but simply to show that such foods can be combined into dishes commonly used in American homes. These meals supply during the day all of the eight essential substances and also provide flavorings and condiments which, while not important as sources of nourishment, add to the attractiveness of certain foods.

BREAKFAST.

Fruit, 1¼ pounds of fresh fruit (equivalent to 3 medium-sized oranges, 5 small apples, or a quart box of strawberries) or 3 or 4 ounces of dried fruits (equivalent to 10 or 12 dates or 4 or 5 figs).

Cereal breakfast food, 4 ounces before being cooked, or about 1½ pints after it is cooked. The equivalent in food value in puffed or flaked ready-to-eat cereals would be 5 or 6 cups.

Milk on cereal, ¼ cup to each person.

Sugar on fruit, on cereal, or in coffee, 2½ level tablespoons or 1¼ ounces.

Bread, 8 slices, or 8 ounces.

Butter, 1¼ ounces, or 2½ cubic inches.

An egg, or 2 ounces of meat, fish, or poultry for each older person, and a glass of milk for each young child.

DINNER.

Meat, or fish, ¼ pound per grown person; or, for each child, an egg or a glass of milk.

Potatoes (5 medium sized), 1¼ pounds.

Another vegetable (turnips, spinach, corn, cauliflower, or other), 1 pound.

Bread, 8 slices, or 8 ounces.

Butter, 1¼ ounces, or 2½ cubic inches.

Steamed apple (or other fruit) pudding. (Ingredients: Two cups flour, 2 tablespoons butter, ¾ cup milk, 4 apples, 1 tablespoon sugar.)

Sauce. (Ingredients: One-half cup sugar, 1½ tablespoons flour, 2 teaspoons butter, ¼ cup water, flavoring.)

SUPPER.

A gravy made out of 1 pint of skim milk, ¼ cup flour, 2 level teaspoons butter, and 4 ounces salt or smoked fish (just enough for flavor). To this can be added the egg yolk left from the frosting of the cake. (See below.)

Rice, 8 ounces, or 1 cup, measured before being cooked.

Bread, 8 slices, or 8 ounces.

Butter, 1¼ ounces, or 2½ cubic inches.

One-half of a cake. (Ingredients for whole cake: One-fourth cup butter, ½ cup sugar, 1 egg, ½ cup milk, 1½ cups flour, 2½ teaspoons baking powder.) Frosting made with 1 egg white and ¼ cup sugar.

Why the Various Substances Are Important.

The mineral substances, such as lime salts, compounds of phosphorus, iron, and others, are supplied largely by vegetables. They serve the body as building material, tend to counteract acidity in the body tissues and fluids and are useful in other ways. Vegetables and fruits, therefore, should not be neglected in the diet, especially as they supply also another substance, cellulose, the framework material of plants, which gives bulk to the diet and tends to prevent constipation.

Protein, a substance supplied by meat or meat substitutes, including milk, is a very important fuel and body-building material. It provides an element—nitrogen—needed to form body tissues, not only during growth in childhood but also to make good the wear and tear of use in persons of any age, thus keeping the body in repair. Absence of foods supplying protein would give a diet lacking in body-building materials.

Different kinds of starch, sugar, and fat are important fuels of the body.

The last group of substances is present in very minute quantities. These minute quantities are believed, however, to be vitally important to the body because of their effect in promoting growth in the young and in keeping the body well.

Succulent vegetables of all sorts contribute bulk to the diet, and so are valuable from the standpoint of hygiene, because within limits bulkiness is a favorable condition for normal digestion and also of importance in overcoming a tendency to constipation. They are also among the important sources of necessary mineral matters in the ordinary diet.

Studies on the digestibility of some animal fats conducted by the Office of Home Economics, United States Department of Agriculture, indicate that chicken fat, goose fat, brisket fat, cream, egg-yolk fat, and fish fat are all well assimilated and that they are satisfactory sources of fat for the dietary. Since butter fat, eaten in the form of cream, and egg-yolk fat are very thoroughly digested and easily obtainable and apparently contain or carry with them accessory food substances necessary in the diet for growth and general well-being, a wide use of these two fats in the dietary is especially desirable.

COOPERATIVE CANNING.

Success Depends Upon Adequate Supply of Fresh, High-Grade Products Through a Long Season.

That a cooperative cannery is unlikely to succeed unless it can handle a sufficient quantity of high-grade fruit or vegetable products is pointed out in an article by W. H. Kerr in the 1916 Yearbook of the United States Department of Agriculture. Many canneries, it is said, have failed because their primary purpose was to dispose of culls and low-grade products, the portion of the crop that could not be sold on the market in a fresh state. Such low-grade products naturally bring low prices. The profit in them is not great, and they are difficult to dispose of at all except in connection with large quantities of high grades.

The first step, therefore, in the establishment of a cooperative canning business should be to make certain that the requisite supply of fresh fruit or vegetables can be obtained. A cannery should be operated as continuously throughout the year as possible in order to avoid the expense of idle machinery and idle help. The most successful cooperative establishments now pack a wide variety of products over a long period, some starting with strawberries in May, and continuing steadily throughout the year until they close the season with the packing of late vegetables in December. If less than 300,000 pounds of raw material are handled annually, says the article, it is not likely that the proceeds will permit a fair return to the producers.

Lack of sufficient capital is another cause of the failure of many cooperative canneries. Such an enterprise requires more capital than the average cooperative undertaking. Considerable money is required to meet operating expenses and the returns from canned goods are frequently not received until as long as 18 months or more after the delivery of the raw material. This means that money must be advanced to the grower when he delivers the raw material, advances of this character frequently ranging from 35 to 65 per cent of the value of the produce. The money required for the purpose may frequently be secured from banks, if the plant and equipment are free from debt when operations are begun. If this is not the case, however, the banks may be unwilling to advance much money. As an instance of what is possible with good credit the article mentions a farmers' cannery in the West which recently purchased a trainload of sugar for use throughout the year and secured $85,000 from one bank for that purpose.

A third consideration of importance is continuity in the business. A sufficient volume of business must be secured not only for one year but for succeeding years, and the contract with the producers, therefore,

should be made to run for a considerable period of time. It is also desirable that the products and the varieties should be distinctly specified. Some of the more successful cooperative canneries have depended primarily upon a few big growers whose interest in the undertaking was sufficiently great to insure their support.

Wherever the business is large enough it is desirable to have a field man to work with the farmer members. An important portion of this man's time should be devoted to making certain that the proper varieties are grown. Market demands change from time to time, and it is essential for success that the cannery be able to supply the kind of products that are most asked for. One safe rule is to put up as high-grade products as possible, and farmers' canneries always should strive to increase the production of the best grades. These usually bring far better average returns to the producer than cheaper material.

EGGS IN THE DIET.

Food Value, Relative Freedom from Waste, and Ease of Preparation Often May Offset High Prices.

Because of the peculiar food value of eggs, their relative freedom from waste, and the ease with which thay may be prepared, their use as meat substitutes at least is often desirable, even when a consideration of their price alone would not so indicate. This is stated in a recently published professional paper of the Office of Home Economics of the United States Department of Agriculture, Department Bulletin 471. It is pointed out, however, that while this is true of eggs served as one of the principal dishes of a meal, it often is not true of eggs used in cakes, puddings, and other desserts along with meats. It is in the latter use of eggs that the housewife who wishes to economize can try especially to curtail consumption. A fact which makes this latter practice easier is that with the present availability of baking powders, corn starch, gelatin, etc., the use of eggs to impart lightness or to thicken liquids is not now as essential as it was in the past.

Food Elements in Eggs.

The principal food element furnished by eggs is protein, the nitrogenous tissue-building element whose presence in considerable proportions also gives meats, fish, milk, cheese, etc., their special food value. Eggs, therefore, can be substituted in the diet for the latter foods without materially altering the proportion of protein consumed. In addition to protein, eggs also furnish fat and a number of valuable mineral elements, including sulphur, phosphorus, iron, calcium, and magnesium, in an easily assimilable form, and are believed also to be rich in certain essential vitalizing elements called vitamins.

Like milk and unlike meats eggs do not contain substance convertible in the body into uric acid. Their shells constitute the only waste materials. Ninety-seven per cent of the portion eaten—a high proportion compared to other foods—is digested. No extended cooking is necessary for eggs, and there is therefore a saving of time, labor, and fuel in their preparation when they are compared with many other foods. For all these reasons eggs deserve an important place in the diet for use at times in place of other foods rich in protein, provided egg prices are not so high as to outweigh the other considerations.

Wholesomeness of Eggs.

Though wholesome when fresh and clean, eggs may be decidedly unwholesome when old or dirty. The housewife should be careful when buying, therefore, to choose eggs which are as clean and fresh as possible. Similarly, the producer of eggs should keep nests clean and sanitary and should collect eggs frequently. It is also well to insure the production of eggs with good keeping qualities by producing only infertile eggs after the hatching season.

How to Select Eggs.

In addition to cleanliness and freshness, the housewife when purchasing eggs should consider size and freedom from cracks. Eggs vary so in size that a dozen large and a dozen small eggs purchased at the same price per dozen may differ as much as 25 per cent in the value of the food elements furnished. Perhaps the fairest way to buy or sell eggs is by weight. Because of the wide variation in the size of eggs, it is also coming to be recognized that more accurate results in recipes can be obtained by weighing or measuring the eggs out of their shells. Cracked eggs are undesirable because the breaking of the shell makes possible the entrance of bacteria and filth.

Cold-Storage Eggs.

Because fewer eggs are produced in the most populous regions of the country than are consumed there, and because the seasons have a marked effect on the number of eggs laid, city housewives must use cold-storage eggs during some periods of the year if they are to supply their tables at all with this food. The fact that eggs have been held in cold storage does not necessarily mean that they are of low quality. Carefully handled cold-storage eggs often are of better quality than fresh local eggs that have been improperly cared for.

Home-Preserved Eggs.

Housewives will often find it advantageous to preserve their own eggs in the home, purchasing them when the supply is abundant, and packing them in a solution of water-glass or lime water, or covering them with paraffin or varnish. Such eggs can be kept in good condition for a number of months.

SOY BEANS AS FOOD.

Cheap and Nourishing—Important Substitute for Other Materials Furnishing Protein and Fat.

Soy beans, introduced into the United States more than a hundred years ago primarily for use as a forage crop, are in reality one of the most nutritious of the legumes when used as human food, according to specialists of the United States Department of Agriculture. These beans have been used for centuries as a staple article of diet in China and Japan and are coming to be used more generally in this country as consumers learn their food value and palatability. Since they furnish protein which contains nitrogen for muscle building and valuable fat, they are especially important to turn to as an emergency addition to the usual dietary or as substitutes for other foods furnishing protein and fat. Moreover, the fact that they contain no starch makes them valuable for invalids who can not eat starchy foods. These beans may be grown easily in practically all sections of the country where corn is grown and give heavier yields than most other beans.

Soy beans have been so important for other purposes that until recently they have attracted little attention for food purposes in this country. They are now coming into their own for that purpose, however, and the acreage of soy beans has increased steadily in recent years. The dried beans may be purchased now in a number of markets in various parts of the country, often under the name of togo beans, and should, with the increased acreage of the coming season, be more generally available. Soy-bean meal, a by-product of oil making, is a valuable food and no doubt will come into more general use.

Where dried soy beans are available, they may be baked with or without pork like navy and other beans. They should be soaked overnight and should be cooked longer than other kinds of beans. The cooking may be done economically in a fireless cooker of the sort provided with heating stones or plates; or on the ledge of the fire box, inside the furnace, if the house happens to be heated with one of this type.

Dried soy beans have been canned in considerable quantities during the past season, baked with pork, and are on sale in this form in numerous markets. Canned green soy beans, which may be compared with Lima beans, also are on the market in some sections of the country. Both these canned products yield as high a proportion of energy and a higher proportion of protein than the canned beans with which they are most closely comparable, and so are more nourishing. Both are produced and handled at a lower cost than other beans.

WASHINGTON, D. C.

ABANDON FOOD PREJUDICES

Don't Be Finicky

Be willing to try new foods. Certain plentiful and nourishing foods widely used and enjoyed in one section are practically unknown in other sections of the country. Learn to know ALL the good things; not a few only.

People too easily get into food ruts—insist on eating only the food they are used to and refuse to give a fair trial to others. This causes undue demand for certain staples, with resulting scarcity or high prices when crops are short. At the same time other valuable foods may be relatively cheap and available. A striking instance of this is failure fully to appreciate rice—a valuable source of starch—when potatoes are scarce and high. Another example is refusal in certain sections to use anything but wheat as a breadstuff when corn—a valuable cereal widely used elsewhere as a breadstuff—is plentiful and relatively cheap.

Cook Food Properly

Learn how to cook all kinds of staple foods and to serve them in a variety of ways. Simple dishes well prepared are better than expensive foods badly cooked.

Many persons are prejudiced against certain good foods because, when first tried, the foods were improperly cooked or prepared.

Remove from your vocabulary "don't like" or "can't eat."

Most individual prejudices against widely popular foods are either imaginary or baseless.

Try to like every simple food; give it a fair trial.

DEMONSTRATE THRIFT IN YOUR HOME

MAKE SAVING, RATHER THAN SPENDING, YOUR SOCIAL STANDARD

U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

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Food Thrift Series—No. 3.

LET NOTHING SPOIL

Heat, dirt, improper handling, flies, insects, and rats or mice are the greatest food wasters

Keep Perishable Food Cold

Keep perishables cool, clean, and covered.

The moment meat, fish, milk, and eggs are allowed to get warm they begin to spoil.

Bacteria and germs multiply rapidly in slightly warm food, and quickly make it dangerous or unfit to eat.

Keep perishable foods in the coolest, cleanest place you can provide, preferably in a good refrigerator or ice house, but, at any rate, in covered vessels suspended in the well, or in the coolest clean place in your home or cellar.

Do not keep perishable foods in a hot kitchen or pantry or in a sunny place a moment longer than is necessary.

Dry cold is a better preservative than damp cold.

Keep Food Covered and Clean

The dust particles in the air carry molds and germs.

Meat, fish, and milk are ideal breeding grounds for such germs. Keep your food covered so that these bacteria and germs will have as little chance as possible to get on your food.

House flies—better called "typhoid flies"—are among the dirtiest things that enter our homes. They fly from sewers, privies, and manure heaps, carrying filth on their feet, which they deposit on any food on which they alight. Frequently germs of typhoid fever are carried by flies in the filth on their bodies, and in their excrement (flyspecks).

Ordinary cleanliness demands that flies be kept out of our homes and away from our food.

Health protection makes it essential to banish flies. Keep all food covered, or at least screened from these carriers of deadly disease and filth. Destroy flies by every possible means.

Guard Food Against Vermin

Rats and mice destroy millions of dollars' worth food and other property every year in homes or farm and in business establishments. Many rats harb the germs of bubonic plague. Trap and kill them Look upon every mouse as an enemy to your propert

Eradicate roaches and house ants. Keep weevi out of cereals.

Keep your food where such pests can not reach i

Keep household pets away from food.

Store Vegetables and Fruits Properly

Don't let fresh vegetables or fruits wilt or lose thei flavor or begin to rot because they are handled care lessly. Keep perishable vegetables in cool, dry, well aired, and for most vegetables, dark rather than ligh places.

Learn how to store potatoes, cabbages, root crops fruits, and other foods so that they will keep properl for later use.

Don't think that any place in the cellar or pantry i good enough to store food.

Heat, dampness, poor ventilation, bruising, o breaking will rapidly make many vegetables rot ferment, or spoil. Warmth and light make vege tables sprout and this lowers their quality.

Can or Preserve Surplus Vegetables and Fruits

When there is a surplus of fruits or vegetables tha will spoil if kept, cook or stew them and keep them cold and covered for use in a day or two.

Can or preserve all surplus food from gardens fo winter use. In a morning's work with ordinary hom utensils, you can put up many cans of vegetables an fruit for winter use. If you have no garden, watch the markets. When any fruit or vegetable that ca be canned becomes plentiful and cheap, buy a quantity and can it for home use next winter.

Be a Food Conservator

Write to-day to the U. S. Department of Agriculture or to your State agricultural college for full information as to how to keep food in the household and how to can and preserve al surplus fruits and vegetables.

DEMONSTRATE THRIFT IN YOUR HOME

MAKE SAVING, RATHER THAN SPENDING, YOUR SOCIAL STANDARD

U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

98833°—17

TO PLAN THREE MEALS.

How the Housewife May Reduce the Cost of Serving Nutritious Food to the Family.

Housewives in many cases can reduce the cost of supplying their tables without reducing the nutritive value of the food served by giving more thought than usually is given to the selection, preparation, and combination of foods. In fact, where carelessness has been the rule (and carelessness is not related to the size of the income), the specialists of the United States Department of Agriculture say careful planning may make possible both a reduction of cost and an increase in nutritiveness and palatability. If any changes are to be brought about in the menu to which a family has been accustomed, however, by eliminating certain articles or substituting less expensive ones, care should be taken that the resulting diet is rational; that is, that it does not contain, on the one hand, too great a proportion of foods of any one type, such as meats and meat substitutes, or starch, sugars, and fats, or vegetables and fruits, and that, on the other hand, it is not deficient in any of these types of food.

In general, habit and custom, shaped by normal appetites, have led to the general adoption of adequate and varied diets in most families where the means are sufficient for any range of choice. Thus, when meat—a food rich in nitrogen—is eaten, potato, rice, bread, or some other starchy food, and fruits and vegetables, and perhaps foods of the other types, usually are served with it. If a person's food habits are good he will eat a reasonable quantity of all the foods provided and obtain a varied meal and not a one-sided one, as might otherwise be the case.

The lists of foods given at the end of this article are intended to show different types of food and different examples of each type. If the foods combined in the diet are chosen according to these types—that is, according to the purpose each group serves in the body—and are eaten in proper proportion, the meals will furnish all the kinds of nourishing elements which the body needs. The five types or groups are:

(1) Foods depended upon for mineral matter, vegetable acids, and body-regulating substances, such as fruits and succulent vegetables.

(2) Foods depended upon for protein, such as milk, eggs, meat, and dried legumes.

(3) Foods depended upon for starch, such as cereal breakfast foods, flours, meals, and foods made from them.

EXTRACT FROM REPORT OF CONFERENCES ON AGRICULTURAL SITUATION.

An important saving may be effected by making the diet as largely vegetarian as possible, without lowering food efficiency, by a partial substitution of such foods as beans and peas and of milk and its products, including skimmed milk, for the more expensive meats.

At present prices a larger use of corn and rice products as partial substitutes for the more expensive wheat products is suggested.

The substitution of the home-grown and home-prepared grain products for the much more expensive refined commercial foods, known as breakfast foods, will make a large saving. Adequate gardens should provide the home supply of vegetables, which are expensive foods when purchased at existing prices. The home storage and preservation of foods, such as eggs, vegetables, fruits, and meats, should be increased.

The serious food wastes that occur in many households through a lack of culinary knowledge and skill may be minimized through instruction in better methods.

(4) Foods depended upon for sugar, such as sugar, molasses, sirups, honey, jams, thick preserves, dried fruits, sweet cakes, and desserts.

(5) Foods depended upon for fat, such as butter, cream, salad oil, and other table fats, lard, suet, and other cooking fats and oils, salt pork, and bacon.

In order that the meals may supply all the needed nutritive elements, one must make sure that all groups are well represented; not necessarily at every meal, but when the family diet is considered day by day and week in and week out. Quantities should vary, particularly of the energy-yielding foods, for persons engaged in different pursuits necessitating different amounts of exercise. The heavier the work the more food is needed. In planning meals in accordance with the method here suggested, choose only a few dishes and make sure that the different groups are represented in the daily fare. Foods in groups 1 and 3 are less expensive, as a rule, than those in group 2, and for this and other reasons should be used freely as a basis of the diet, with sufficient amounts of foods from groups 2, 4, and 5 to round out the meals. Remember that the materials used in cooking or served with foods (flour, eggs, milk, fat, sugar, etc.) add their food value to the diet. Remember also that it is not necessary to supply all the types of food at every meal, providing enough of each is supplied in the course of the day. For example, if the foods which are depended upon for nitrogen (meat, eggs, milk, etc.) are found in abundance at breakfast and dinner, it is not necessary to include them at supper or lunch; or if a person prefers a light breakfast, he may leave out the nitrogen-rich food and perhaps some of the other foods in the morning and make up for it at the noon and evening meals. In the following lists dishes suitable for the different meals are grouped according to the kind of nutritive materials which predominates in each, and the groups are given in the order in which they are usually introduced in family meals. The dishes mentioned are examples only. Housekeepers will readily think of dishes of similar kind which they may prefer. The important thing is to know which foods belong to the different groups and then to see that all the groups are represented in the family meals.

Breakfast.

Breakfast is a much more elaborate meal in some American families than in others. Where it is hearty, all five of the food groups may be represented, though usually in dishes which do not require elaborate preparation, and with more from the bread and cereal group than from any other. When a lighter breakfast is preferred it usually consists mainly of the bread and cereal foods (group 3) with a little fat and possibly sugar (groups 5 and 4) to make it palatable, and perhaps a little fruit (group 1). Such a breakfast is made more hearty by including milk or an egg from the protein group (group 2).

FRUITS AND VEGETABLES.

(Representing group 1, depended upon to supply ash constituents and organic acids.)

Stewed prunes, dried peaches, or other dried fruits, or fresh or canned fruits when obtainable at reasonable prices. If preferred, sweet dried fruits, jam, or thick preserves (representing also group 5) may be used instead. Because of their laxative properties as well as food value, succulent fruits are eaten for breakfast, and are particularly desirable if vegetables and other fruits are not freely used at other meals.

BREAKFAST CEREALS AND BREADS.

(Representing group 3, depended upon to supply starch.)

Breakfast cereals. — Corn - meal mush, cracked-wheat mush, oatmeal mush, rice, or other cereals. Wheat raised on the farm or bought from a near-by feed store and coarsely ground in a coffee mill is a good homemade cereal. So is popcorn.

Breads. — Graham bread, whole-wheat bread, oatmeal bread, wheat-flour and rice bread, muffins, popovers, griddlecakes, etc. With bread, butter (representing group 5)

would usually be served, and sometimes with griddlecakes, butter, and sirup (representing group 4) also.

EGGS, MEAT, MILK, AND SIMILAR FOODS.

(Representing group 2, depended upon to supply nitrogen.)

Eggs (scrambled, boiled, poached, etc.), egg toast, meat balls, codfish balls, hash (from left-over or corned meat), and milk.

Milk taken with breakfast cereals or used as a beverage is an important source of nitrogenous material, a glass supplying as much as 2 ounces of lean meat or one egg. Cooking cereals with milk instead of water is a convenient way of adding nitrogenous material to the meal.

SUGAR AND OTHER SWEETS.

(Representing group 4, depended upon for sugar.)

Sugar, sirup, molasses, honey, thick dried fruits, jam, and heavy preserves. Sugar, honey, molasses, or sirups are usually added to other foods in cooking or when they are eaten. Dried fruits may be cooked with cereal and so may take the place of sugar added to them. This group serves much the same purpose in the body as group 3, though ordinarily used in smaller quantities, but is important for flavor purposes as well as nutritive material.

BUTTER AND SIMILAR FOODS.

(Representing group 5, depended upon to supply fats.)

Cream, butter, and other fats used in cookery, bacon, fat pork.

With the exception of fat meats, the fat foods are usually eaten with other foods, or used in them or in cooking them.

Luncheon or Supper.

Luncheon or supper may include dishes from all five groups, but in simpler form or smaller quantity than at dinner, though such an elaborate meal is by no means necessary. If a light luncheon is desired, group 2 (meats and similar foods) may be omitted or used in smaller amounts, or if a still lighter meal is desired, dessert (represented by group 1 or group 4) may be omitted also. When the other meals are abundant, both meat and sweets or fruit might be omitted, and bread and butter or bread or cereal and milk used alone.

EGGS, MEAT, FISH, CHEESE, AND SIMILAR FOODS.

(Representing group 2, depended upon to supply nitrogen.)

Eggs; thick dried-bean soup (soy or togo beans or cowpeas, if obtainable, are as desirable as navy or other beans more commonly used); meat-stock soup; toasted cheese and crackers; chipped beef with white sauce, i. e., thickened milk sauce; dried beans or peas baked or boiled; baked peanut or other nut loaf (ground or chopped and mixed with bread crumbs, an egg, milk, and seasoning); meat stew or pie (left-over meat or cheap cuts); or codfish balls; sliced meat (from roast of previous day); cold baked or boiled bean salad; canned or fresh fish salad (if fish may be obtained cheaply); stuffed eggs; egg, nuts, cheese (often used in made dishes or with crackers in place of sweet dessert), or meat sandwiches; or milk. Either hot or cold dishes are used for luncheon according to convenience. The above list includes both.

BREAD, ROLLS, AND SIMILAR FOODS.

(Representing group 3, depended upon to supply starch.)

White bread, or "light" bread, rye bread, toast, corn bread, rolls, buns, crackers.

Either hot or cold bread may be used as desired. Cooked cereals (see list of breakfast dishes) are suitable for use when a light luncheon or supper is desired.

BUTTER AND OTHER FATS.

(Representing group 5, depended upon to supply fat.)

Butter, cream, table oil, and other fats and oils used on the table and in cookery.

CAKES AND OTHER SWEETS.

(Representing group 4, depended upon to supply sugar and flavor.)

Sugar, jams, jellies, thick preserves, sweet dried fruits, simple cake, cookies, and "left overs" from dinner desserts.

FRUITS AND VEGETABLES.

(Representing group 1, depended upon to supply ash constituents and organic acids.)

Fruits (fresh or stewed); warmed-over potatoes; left-over vegetables; fresh vegetables used in salads, such as lettuce, celery, young onions, radishes, etc. Fruits fresh or stewed are commonly eaten at luncheon or supper as dessert. Sometimes fruit is served at the beginning instead of at the end of luncheon or supper.

Dinner.

Dinner is usually the heartiest meal of the day, and commonly a meal at which all the five groups are substantially represented. Generally speaking, the fewer times each group is represented by a principal dish, the simpler the meal. For instance, a dinner with a meat soup and a meat is not so simple as it would be if the soup were omitted. Meals seem more abundant if several representatives of group 1 (fruits and vegetables) are used instead of only one, and it is a common custom to serve one or more vegetables besides potatoes. Using a simple dessert which requires little time to prepare, such as fresh or stewed fruit or preserves with cake, or omitting dessert altogether, is a good way of simplifying dinner.

MEATS, FISH, CHEESE, AND SIMILAR FOODS.

(Representing group 2, depended upon to supply nitrogen.)

Baked, scalloped, or fried fish, meat stew, pot roast, or meat loaf with gravy (inexpensive cuts), or other meat and fish dishes; baked beans (soy beans or cowpeas, if obtainable, are as desirable as navy or other beans more commonly used); cheese with macaroni or rice: bean or peanut loaf.

POTATOES, GREEN VEGETABLES, FRUITS, AND SIMILAR FOODS.

(Representing group 1, depended upon to supply mineral matter and organic acids.)

Potatoes, sweet potatoes, turnips, carrots, parsnips, beets, onions, greens (beet tops, kale, spinach, etc.), celery, lettuce, cabbage, collards, tomatoes, green corn, snap beans, green peas, or other green or succulent vegetables grown in the garden or which may be cheaply procured: fresh, stewed, or canned fruits.

Members of group 3, such as rice, hominy, or macaroni, are often served in place of a vegetable. When this is done care must be taken to supply fruits and greens in order that mineral matter and fruit and vegetable acids may not be lacking.

BREADS, BISCUITS, AND SIMILAR FOODS.

(Representing group 3, depended upon to supply starch.)

Wheat bread or corn bread, hot or cold, rye bread, biscuits, rolls, crackers.

Potatoes and sweet potatoes are an important source of starch and similar nutrients in the diet, and in this respect resemble bread and other cereal foods. However, they are included in group 1 because of their special importance as a source of mineral and other valuable substances.

PUDDINGS, CAKES, AND SIMILAR FOODS.

(Representing group 4, depended upon to supply sugar and give flavor.)

Bread pudding, cottage pudding, simple fruit puddings, custard, or other simple made desserts, dried sweet fruits, jams, preserves.

Fresh or canned fruits representing group 1, cheese representing group 2, with crackers representing group 3, or nuts representing group 2, may be used for dessert for variety.

BUTTER, CREAM, AND SIMILAR FOODS.

(Representing group 5, depended upon to supply fats.)

Butter, cream, salad oil, and other table and cooking fats and oils.

SOUPS THAT NOURISH.

Thick Soup, Broths, and Chowders a Meal in Themselves—An Excellent Use for "Left Overs."

Although clear soups, which are largely water, contain little nourishment, some thick soups, broths, and chowders are literally a meal in themselves, according to the dietary specialists of the United States Department of Agriculture. Even a thin soup, taken at the beginning of a meal, by its warmth and pleasant flavor may stimulate digestion, so that the heavier foods are more easily digested. The combination of soup and bread is pleasant and leads to the eating of more bread or crackers than would be consumed ordinarily. Appetizing soups also may be made often of materials which otherwise would be wasted. In this way such materials are made to contribute whatever food value they may have for the cost of the labor and fuel needed to prepare them.

One of the purposes which food serves in the body is to furnish energy for its muscular work, and one way of comparing the relative food value of different foods is to compare the amounts of energy which they furnish, or, as physiologists call it, their fuel values. A cup (i. e., one-half pint or a large soup plateful) of milk soup flavored with vegetables yields a little more energy to the body than the same amount of milk. A thick meat soup with pieces of meat and vegetables in it, a fish chowder, or a rich vegetable soup, such as cream of tomato, yields half again as much energy as the milk; while a thin soup like bouillon, consomme, or clear tomato soup, yields not quite two-thirds as much as the milk, and less than half as much as the thick soup or chowder. A generous serving of thick meat soup or fish chowder yields more energy than an ordinary portion of roast beef, and even a moderate helping of vegetable milk soup usually furnishes fully as much body fuel as a moderate sized rib chop of lamb.

There are other things to be considered besides energy in connection with the food value of different kinds of food. One is the amount of the substance called protein without which the body can not build and maintain its tissues. Meat and milk soups contribute some of the needed protein. Meat, poultry, fish, eggs, milk, cheese, dried peas, beans, and other legumes are the common foods in which protein is the most abundant, though it also appears in fair amounts in the cereal foods such as bread, breakfast foods, macaroni, and the like.

The Soup Pot a Means of Economy.

Since many of the protein-rich foods are among the most expensive of those in common use, it is especially important to make the fullest possible use of what is bought. Not all of the meat which we buy is suitable for use as such. The masses of fat which are trimmed off before cooking or are left on the platters may be saved, rendered, and used in cooking, while the bones, gristle, and other refuse parts find their best use in the soup pot, where the long, slow cooking in water draws out the gelatin, fat, and other nutritive material they contain. This stock, as the resulting liquid is called, may serve as the basis not only of a great variety of soups, but also of gravies and sauces, and may be used for cooking vegetables, rice, and similar foods. When it is used for soup, its flavor may be varied by adding various vegetables, such as carrots, onions, tomatoes, turnips, and celery. It may be thickened with flour, bread crumbs, or okra. Boiled rice, barley, macaroni, and other pastes and croutons (small pieces of stale bread fried a delicate brown in deep fat) may be put in to increase the food value of soup and vary its appearance and taste.

Milk Soups and Vegetable Purées.

Soup is not necessarily made from meat stock. Vegetable soups or purées are made by boiling potatoes, beans, peas, or other vegetables until soft, mashing through a sieve and then heating with a little liquid (water, milk, soup stock, or whatever seems desirable) and flavoring. Using left-over vegetables for such purées is an economical practice. Milk soups, which are really milk thickened and flavored with some vegetable, fish, or other food to give flavor, and perhaps thickened still more with a little flour or stale bread crumbs, are both nutritious and appetizing. They furnish also an excellent means of using up skim milk. Those who wish to bring down the cost of food should remember that skim milk, a cup of which contains as much protein as a cup of whole milk, is far too valuable a food to be overlooked.

Importance of Vegetables in Soups.

In soup making it should not be forgotten that vegetables are necessary for keeping the body in health, because they are relatively rich in mineral matters and mild vegetable acids, and contain recently discovered substances without which the body processes seem not to be carried on properly. Since soups offer an excellent way of utilizing odds and ends of vegetables, and especially left overs and parts which otherwise would be wasted, the use of vegetable soup is often a real economy. The fact that soups can be given so many and so varied flavors, are so easily made, so generally relished, and make such palatable combinations with large quantities of bread and crackers, shows that they are very useful additions to the diet. Some recipes for soups, recommended by the Government specialists, follow.

Recipes for Nourishing Soups.

SCOTCH BROTH.

3 pounds mutton.
2 tablespoons pearl barley.
2 tablespoons minced onion.
2 tablespoons minced turnip.
2 tablespoons minced carrot
2 tablespoons minced celery.
2 tablespoons salt.
1 teaspoon pepper.
1 tablespoon minced parsley.
3 quarts cold water.

Remove the bones and all the fat from the mutton, cut the meat into small pieces, and put it into a stewpan with the water, chopped vegetables, barley, and all the seasoning excepting the parsley. It will be found convenient to tie the bones in a piece of thin white cloth before adding them to the other ingredients. Bring the stew to a boil, quickly skim it, and allow it to simmer for three hours, thicken with the flour, and add the chopped parsley.

DRIED FISH CHOWDER.

½ pound salt fish.
4 cups potatoes, cut in small pieces.
2 ounces salt pork.
1 small onion, chopped.
4 cups skimmed milk.
4 ounces crackers.

Salt codfish, smoked halibut, or other dried fish may be used in this chowder. Pick over and shred the fish, holding it under lukewarm water. Let it soak while the other ingredients of the dish are being prepared. Cut the pork in small pieces and fry it with the onion until both are a delicate brown, add the potatoes, cover with water, and cook until the potatoes are soft. Add the milk and fish and reheat. Salt, if necessary. It is well to allow the crackers to soak in the milk while the potatoes are being cooked, then remove them, and finally add to the chowder just before serving.

MILK AND CHEESE SOUP.

3 cups milk, or part milk and part stock.
1½ tablespoons flour.
1 cup grated cheese.
Salt and paprika.

Thicken the milk with the flour, cooking thoroughly. This is best done in a double boiler, with frequent stirrings. When ready to serve, add the cheese and the seasoning.

The protein in this soup is equal in amount to that in five-sixths of a pound of beef of average composition; its fuel value is higher than that of a pound of beef.

MILK AND VEGETABLE SOUP.

1 quart skim milk.
1 cup bread crumbs, or
2 large slices stale bread.
1 small slice onion.
Small amount spinach or outer leaves lettuce (not more than 4 ounces).
Salt.

Cut the vegetables into small pieces and cook with the bread crumbs in the milk in a double boiler. If a large quantity is being prepared for use in a school, for example, put the vegetables through a meat chopper. In this case slices of bread can be ground with the vegetables, in order to absorb the juice.

COWPEA SOUP.

1 tablespoon butter or pork fat.
1 tablespoon finely chopped onion.
1 stalk celery, finely chopped.
1 cup dried cowpeas.
Salt.

Soak the peas 8 or 10 hours in water enough to cover. Fry the vegetables in the fat, add the peas, in the water in which they were soaked, and cook (preferably in a double boiler) until the peas are tender. Put the mixture through a sieve and add water enough to bring it to the desired consistency. Reheat. If this soup is thickened with 1 tablespoon of flour mixed with a little water, the pea pulp will be prevented from sinking. Dried navy or lima beans, peas, soy (togo) beans, or other legumes may be used instead of the cowpeas.

SPLIT-PEA SOUP.

1 pint dried peas.
4 quarts water.
1 large onion, minced fine.
4 tablespoons sweet drippings, or butter, which gives a better flavor.
3 tablespoons flour.
1 tablespoon minced celery or a few dried celery leaves.
½ teaspoon pepper.
2 teaspoons salt.

Wash the peas and soak them overnight in cold water. In the morning pour off the water and put them in the soup pot with 3 quarts of cold water. Place on the fire and when the water comes to the boiling point pour it off (throw this water away). Add 4 quarts of boiling water to the peas and place the soup pot where the contents will simmer for four hours. Add the celery the last hour of cooking. Cook the onion and drippings slowly in a stewpan for half an hour. Drain the water from the peas (save this water) and put them in the stewpan with the onions and drippings. Then add the flour and cook half an hour, stirring often. At the end of this time mash fine and gradually add the water in which the peas were boiled until the soup is like thick cream. Then rub through a sieve and return to the fire; add the salt and pepper and cook 20 minutes or more. Beans can be used in the same way as peas.

MIXED VEGETABLE SOUP.

3 quarts water.
1 quart shredded cabbage.
½ pint mixed carrot.
1 pint sliced potato.
½ pint minced turnip.
½ pint minced onion.
1 leek.
2 tomatoes.
2 tablespoons minced celery.
2 tablespoons butter or drippings.
2 tablespoons green pepper.
3 teaspoons salt.
½ teaspoon pepper.

Have the water boiling hard in a stewpan and add all the vegetables except the potatoes and tomatoes. Boil rapidly for 10 minutes, then draw back where it will boil gently for 1 hour. At the end of this time add the other ingredients and cook one hour longer. Have the cover partially off the stewpan during the entire cooking. This soup may be varied by using different kinds of vegetables.

CABBAGE AND POTATO SOUP.

½ pint boiled cabbage, finely minced.
3 medium-sized potatoes.
1½ level tablespoonfuls butter, drippings, or other fat.
1 teaspoonful salt.
¼ teaspoonful pepper.
1½ pints milk, whole or skim, or milk and water, boiling hot.

Peel the potatoes, cover with boiling water and cook until tender, usually 30 minutes; pour off the water and mash until fine and light. Add the cabbage, butter or other fat, and seasoning, then slowly add the hot milk or milk and water and boil up well. If a thinner soup is required the amount of milk or milk and water can be increased. If liked, an onion cut up fine and cooked in a little water may be added to the soup to give additional flavor, or grated cheese may be served with it. Kale, turnips, or a mixture of vegetables can be substituted for the cabbage, if desired, and this is a good way to use up left-over vegetables.

ONION SOUP.

2 large onions or 4 medium ones.
3 level tablespoonfuls fat, butter, or a mixture of the two.
3 pints boiling water, or water and skim milk (half and half).
1½ teaspoonfuls salt.
¼ level teaspoonful pepper.
2 tablespoonfuls flour for thickening, if desired.

Melt the fat and when hot put in the onions, which have been cut up fine; cook slowly until the onions are soft, then over a hotter fire until the onions are brown—but not at all burned. Add the boiling water or water and milk, thicken with the flour stirred up in a little cold water, if it is desired to give the soup a little more "body"; boil up well and serve. It is a common custom to pour the soup over pieces of browned bread before serving. A mild cheese, grated, is a good addition to the soup, particularly if it is made with water.

Kohl-rabi leaves, if not too tough, are excellent when cooked as greens, and may be served as a border around the kohl-rabi or as a separate dish.—United States Department of Agriculture.

Though most commonly eaten raw, radishes, especially the larger sorts, are also cooked and served like creamed turnip, which they much resemble in flavor. The leaves can be used for greens, or if they are very tender can be added to salads.—United States Department of Agriculture.

The young and tender seed pods of some varieties of radishes are sometimes used for pickling like capers; in fact, the Madras or rat-tail radish is grown exclusively for its pods, which are eaten cooked and also used in pickle making.—United States Department of Agriculture.

FOOD COMBINATIONS.

How to Make Use of "Left Overs" and Save Food Material, Fuel, and Labor at the Same Time.

Numerous palatable combinations of two or more food materials which can be prepared by the housewife with but little trouble in themselves will supply the major part of a well-chosen meal. Such combinations should be used very frequently to simplify and make more economical the serving of a rational diet for the family, say specialists of the United States Department of Agriculture. Combining "left overs" into a palatable dish, for example, effects a considerable saving in material, in fuel, and in the labor of preparing meals and cleaning cooking utensils and dishes. Good use thus is made of food which might otherwise be wasted when one dish is prepared, cooked, and handled instead of several.

The character of any one of the daily meals should be determined by that of the other meals that are served. A light breakfast and a light supper or luncheon, for instance, usually make desirable a heavier dinner. In some families the preference may be for a hearty breakfast and dinner and a very light supper, and so on through a considerable range of individual tastes. If the meal is to be a light one, the combination dish, together with the bread and butter which usually accompany American meals, may be all that is wished. If the combination dish forms the central part of a heartier meal, it is in accordance with our usual food customs to serve with it, in addition to bread and butter, such foods as garden vegetables, fruits (fresh or cooked), and simple desserts. Good planning necessitates in the principal meals of the day such variety as has been suggested in order that all the varied nutritive substances which the body requires may be supplied.

The following are some suggestions for a few of the many nutritious combination dishes which may be prepared without too much trouble from staple food materials and common "left overs," and for other foods which can accompany them to make a well-rounded meal. Every housekeeper, of course, will have a special liking for certain dishes and combinations.

Some Typical Combination Dishes.

Spaghetti or macaroni or rice cooked with tomato, onion, or green pepper, and cheese or cheese sauce, *served with*—

White, graham, or whole-wheat bread and butter, and

Stewed or sliced fruit and simple cookies.

Boiled rice baked (scalloped), with minced left-over meat, chipped beef, or fresh or canned fish, *served with*—

Beet, dandelion, or other greens, dressed with peanut, olive, cottonseed, or other table oil, with vinegar or lemon juice enough to flavor the dressing, and

Wheat, corn, or rye bread and honey.

Boiled rice scrambled with eggs, *served with*—

A succulent vegetable such as stewed tomatoes, canned corn, green peas or beans, and

Bread and butter, and

Nuts and raisins or other dried fruits.

Green peas and canned salmon with white (i. e., thickened milk) sauce, *served with*—

Corn bread and sirup.

Meat pie (meat from inexpensive cuts) or fish pie with flour or potato crust, *served with*—

Turnips, carrots, onions, or parsnips, and

Biscuits and butter, with jam or jelly or hot chocolate.

Mashed potato with creamed codfish (i. e., cream sauce containing a little salt codfish), *served with*—

Lettuce with oil and vinegar or lemon-juice dressing, and

Crackers and cheese or peanut butter sandwiches.

Meat stew (inexpensive cuts or left overs), with turnips or other vegetables, including left overs, and with rice in the stew or flour or corn-meal dumplings; or fish chowder made from fresh, canned, or dried fish, crackers, skim milk, and onion, *served with*—

Bread and butter, and

Fresh or stewed fruit.

Boiled dinner (corned beef or corned mutton cooked with fresh vegetables, as potatoes, turnips, carrots, etc.) *served with*—

Bread and butter, and

Apple or other fruit and bread-crumb pudding.

Cowpeas boiled with pork and combined with boiled rice, *served with*—

A green vegetable or vegetable salad, and

Honey, brown sugar, maple sugar, or date sandwiches.

Beans baked with pork or bacon, *served with*—

Boston brown bread and butter, and

Tart apple sauce and cookies.

Bean and cheese roast [1] (a mixture of cooked beans and cheese prepared and seasoned like a meat loaf) with tomato sauce or brown gravy, *served with*—

Sweet potatoes, and

Bread and butter, and

Sliced orange and banana or other fruit.

[1] U. S. Dept. Agr., Farmers' Bul. 487 (1915), p. 28. Cheese and Its Economical Uses in the Diet.

USE UP STALE BREAD.

Do Not Permit the Odds and Ends Frequently Found in the Bread Box to Be Wasted.

Bread is one of the items most commonly wasted in many American households, say the specialists of the United States Department of Agriculture. This waste is probably due to the fact that many housekeepers do not think of bread as costing much and are careless about its use or do not know what to do with the odds and ends frequently found in the bread box.

Good, fresh bread has a spongy texture, which in time disappears, leaving the bread dry and crumbly, the moisture gradually passing out through the crust. Bread a little too stale to be appetizing, but not yet hard, may be freshened by putting it into the oven for a few minutes. The heat seems to drive the moisture from the crust back into the center of the loaf, making the crust more crisp and the crumb a little more spongy. Some housekeepers moisten the surface of the bread and sometimes cover it before putting it into the oven, but others think that moistening injures the texture of the crust without improving the crumb.

Rolls or biscuits which have a greater surface in proportion to their size dry out more rapidly than loaves of bread. It is good planning, therefore, not to provide more than will be used at a meal or at least a day after baking. For similar reasons, bread stays fresh longer in the loaf than after it is sliced. No more than will be needed should be cut for any one meal, and one loaf should be used up before the next is cut into. When the bread needs freshening it is a good plan to cut the required slices and put them into the oven for a few minutes just before serving.

Toast.

Toast is another form in which partly stale bread can be made attractive. In many families it is served only for breakfast, luncheon, or supper, but the custom which many high-grade restaurants have adopted of serving thin, crisp, hot toast with the more substantial meals might well be followed at home. Such dishes as chopped meat with gravy, creamed chicken or fish, poached eggs, melted cheese, cooked asparagus, Swiss chard, baked tomatoes, etc., are served very commonly on toast. Cream or milk toast (that is, toast with a cream sauce or milk gravy, perhaps flavored with a very little chipped beef, salt fish, or other savory) may be used as the main dish at breakfast, luncheon, or supper. Slices of toast may also be dipped in water or milk and beaten egg and lightly browned on a hot greased pan. The recipe for this dish, which is called by various names, is given in the appended recipes under the heading "Egg toast." It may be used at breakfast, and has the advantage of making the eggs "go further" than if used in a separate dish, or it may be served with cinnamon and sugar, sirup, or any sweet sauce for dessert.

As a Breakfast Food.

Another good way of using stale bread, or of treating bread so that it shall not become stale, is to put the pieces in the warming oven or on the back of the stove and leave them until they are crisp and a delicate brown throughout. This is often called twice-baked bread and is very popular with children and also with grown-ups, who like its "crunchiness" and the flavor which comes with the slight browning. The rusks, which used to be commonly served like breakfast cereals in some parts of the country, were made by crushing such twice-baked bread with a rolling-pin.

Crumbs Valuable in Cookery.

There is nothing new in the idea of using bread crumbs in cookery, and most housekeepers are in the habit of having some on hand for use in scalloped dishes, stuffing for meat, puddings, etc. Few realize, however, how much more generally they might be utilized. Many commercial bakers use bread crumbs to some extent as a substitute for flour in many sorts of cakes, cookies, puddings, etc. Crumbs may also be used instead of flour and starch for thickening soups and sauces.

Any bits of bread which can not be eaten on the table should be saved and crumbed for use in cooking. Some housekeepers keep two kinds on hand—one, stale crumbs made chiefly from the inside of the loaf and suitable for use in the place of flour; and dried crumbs made from any part of the bread browned a little in a very slow oven and crushed fine to be used in scalloped dishes, for the coating of croquettes or other fried foods or wherever a crusty fine crumb is needed. To prevent their growing musty, crumbs should be kept in dry air-tight containers. Fruit jars are often convenient for the purpose.

How to Utilize Quick Breads.

Yeast-made bread is by no means the only bread that can be utilized in some of the ways suggested. The quick breads raised by baking powder, soda, and sour milk or other acid, etc., dry out more quickly than the yeast bread, probably because the water is not so thoroughly incorporated with the flour during the making. These breads can not be freshened simply by putting in the oven like yeast-raised bread. Quick biscuit, however, make delicious toast, which is very convenient for serving under meats, eggs, etc. The crumbs made from them may also be used in other breads, cakes, and puddings, as may also corn bread and cake

crumbs wherever their flavor is not objectionable. Boston brown bread toasted and served with a cream sauce is a delicious dish for supper or breakfast. Toasted rye bread is also good. Crackers, which are practically dried bread baked in different shapes, and which may lose their crispness if kept exposed when the air is moist, can be freshened or made crisp by putting into the oven. The crumbs made from them serve many of the purposes of dried-bread crumbs. A number of recipes for using left-over bread follow:

Stale-Bread Recipes.

VEGETABLE SOUP THICKENED WITH BREAD CRUMBS.

1 quart skim milk.
1 cup bread crumbs, or 2 large slices stale bread.
Salt.
Small amount spinach or outer leaves lettuce (not more than 4 ounces).
1 small slice onion.

Cut the vegetables into small pieces and cook with the bread crumbs in the milk in a double boiler. If a large quantity is being prepared, as in a school lunch room, for example, put the vegetables through a meat chopper. In this case slices of bread may be ground with the vegetables in order to absorb the juice.

PANCAKES.

1 cup crumbs.
2¼ cups skim milk.
½ cup flour.
4 teaspoons baking powder.
1 teaspoon salt.
1 teaspoon sugar.
1 teaspoon melted fat.
1 egg.

Soak crumbs in milk for three-fourths of an hour. Then add other ingredients and cook on a hot griddle, like ordinary pancakes. If sour milk is used, substitute one-half teaspoon baking soda for the 4 teaspoons baking powder.

GINGERBREAD.

1 cup molasses.
½ cup boiling water.
1⅓ cups fine bread crumbs.
⅔ cup flour.
1 teaspoon baking soda.
1½ teaspoons ginger.
½ teaspoon salt.
4 teaspoons melted lard or other fat.

Add water to molasses and combine with the dry ingredients mixed together, then add fat, and beat. Bake for about 25 minutes in a hot oven.

INDIAN PUDDING MADE WITH CRUMBS.

1 cup fine crumbs.
1 quart skim milk.
⅓ cup sugar.
¼ cup molasses.
2 tablespoons melted butter or other fat.
½ teaspoon ginger.
½ teaspoon cloves.
½ teaspoon cinnamon.

Scald the crumbs in milk; add the other ingredients; and bake 1½ hours in a slow oven. This pudding may be made with any kind of bread crumbs, but it furnishes an especially good means of using up stale corn bread.

EGG TOAST.

6 slices bread.
1 egg.
1 cup milk, skim milk, or water.
½ teaspoon salt.

Beat the egg, and add the liquid and salt. Let the bread soak in the mixture until slightly soft. Then fry to a light brown on a hot, well-greased pan or griddle. More eggs may be used if available.

ECONOMY IN USING MEAT.

Suggestions for Saving in the Cost of the Most Expensive Article in the Food Bill.

Meat is one of the more expensive items in the food bill of the ordinary family, and for this reason it is important that it be bought and used to the best possible advantage.

American consumers are reminded of this in a statement just issued by specialists of the United States Department of Agriculture. The methods by which economy may be effected will vary, it is pointed out, with the conditions surrounding each family, with the amount of personal supervision given by the housewife to the preparation of food, with her skill, with market conditions, and with the willingness of the members of the family to eat dishes other than those—often especially expensive—for which they have a special liking.

Many persons, says the statement, eat over-abundantly of meat. In such cases it should be possible, if the incentive is great enough, to reduce expenditure for meat by reducing the amount purchased. Where meat has been purchased by telephone or orders to a butcher's boy, personal shopping and careful selection may make a saving possible. Still another possibility for economizing is to purchase cheaper cuts and to compensate for any toughness and less desirable flavor by preparing them more carefully for the table. Finally, economy often may be achieved by utilizing the meat more completely, including the trimmings and bones and "left overs."

In purchasing the cheaper and often tougher cuts of meat instead of the choicer cuts, a housewife is losing little if any nutriment, provided, of course, the proportion of bone to meat is no greater than in the more costly kinds. She rather is sacrificing only texture or flavor or ease of preparation for the sake of cheapness; and, if she wishes to produce dishes as palatable as those made from expensive meats, must expend more care on preparing, flavoring, and cooking. If the cheaper steaks are purchased, for example, a degree of tenderness may be imparted to them by the well-known method of pounding the meat. The juices and flavors of such steaks will be retained more satisfactorily if flour is sprinkled over them during the beating process and so worked into the fibers on the surface.

Another common method of utilizing the tougher meats is to grind them and form them into balls which may be broiled like steak. Cheap cuts of meat also may be cooked slowly with vegetables or dumplings in a casserole or any other thick-walled baking dish which can be covered, the juices thereby being retained.

Whatever the quality of meat bought, undoubtedly there will be in most cases trimmings and scraps such as fat, bones, gristle, etc. The fat may be tried out by grinding or chopping and heating in a double boiler. The tried-out fat then may be boiled in water and allowed to solidify on the surface of the water when the latter cools, impurities being scraped from the under surface of the cake. Trimmings of lean meat, gristle, and bone may be boiled slowly and used for soup stock.

Left-over portions of cooked meats from serving dishes may be used in a variety of ways to prepare palatable dishes. In utilizing such materials and in the preparation of other meats the knowledge of a few general principles of cookery, such as the quantity of flour required to thicken sauce, the time needed for cooking meats of varying toughness, the proportion of starchy foods or succulent vegetables to combine with meats and the like, makes it easy to utilize whatever materials may happen to be on hand without a special recipe for each particular dish. Left-over cooked meats may be used, like small pieces of uncooked meat, with vegetables and other foods in the preparation of casserole dishes, in making stews, hashes, croquettes, etc. Cold sliced meat may be served with hot gravy made from soup stock, milk, meat fat, and flour, or other ingredients.

An important way in which the amount of money expended for meat may be lessened is by preparing relatively small quantities of meat in such a way as to extend its flavor to other and cheaper foods. In using meat so as to extend its flavor it may be ground and combined with rice, bread crumbs, etc., to form croquettes; made into pies with relatively large quantities of pastry; cooked with dumplings; served in the same dish with gravy and starchy foods, such as spaghetti or rice; ground and used with bread crumbs or other materials, as a stuffing for vegetables, such as tomatoes and green peppers; or cut thin and wrapped around a stuffing of bread crumbs, rice, vegetables, etc.

If it is considered desirable, other protein foods may be consumed in larger quantities to take the place of the meat formerly eaten. This protein may be furnished by eggs, if they are cheap, skim milk, cheese, dried beans, peas, cowpeas, and other legumes.

A few typical recipes are given below as examples of the many dishes housewives may prepare with meat as the chief ingredient.

Dishes from Cheaper Cuts of Meat.

Braised beef or pot roast.—Brown the meat on all surfaces, place in closely covered kettle or other receptacle with small quantity of water and flavoring vegetables, such as onion, carrot, etc., and cook until tender. Browning the meat helps to keep in the juices. The slow cooking in water and steam makes for tenderness.

Savory beef.—Cut a pound of top round of beef into 2-inch pieces and sprinkle with flour; fry a small piece of salt pork until light brown; add beef and fry for about 35

minutes, stirring occasionally. Cover with water and simmer about two hours (fireless cooker may be used); season with salt and pepper or paprika. Serve with a sauce made as follows: Cook in water for 20 minutes a cup of tomatoes, part of a stalk of celery, one-half onion, three whole cloves, three peppercorns, and one blade of mace or a very little nutmeg. Rub through a sieve, add some of the gravy from the meat, thicken with flour moistened with cold water, and season with salt and paprika. Noodles, boiled rice, hominy, or chopped potatoes, carrots, and green peppers or other vegetables in season may be served on the same dish.

Casserole roast.—(A casserole may be improvised by using a heavy earthenware dish covered with a plate.) Brown round or rump of beef in fat from a slice of fried pork. Place in casserole with chopped carrot, turnip, onion, celery, etc., around it. Add two cupfuls of water or stock, cover and cook in hot oven three hours, basting occasionally.

Extending the Flavor of Meat.

Stew with dumplings.—Make stew from small pieces of meat and vegetables, cooking it on stove or in fireless cooker. Serve with dumplings made as follows: For a stew using 1 pound of meat mix a little more than one-third cup of flour with one teaspoonful of baking powder and a pinch of salt, work in a rounding teaspoonful of butter and mix with enough milk to form a medium stiff dough. Cut into small pieces and cook in a buttered steamer over a kettle of boiling water or remove enough gravy from the stew to expose the meat and vegetables, and place the pieces of dough on these solid materials to cook.

Meat pie.—Meat pies are made most satisfactorily by first cooking the meat and vegetables as for a stew. Line a pan, earthenware dish, or casserole with biscuit dough rolled fairly thin, put in the meat, vegetables, and gravy, cover with dough, and bake in a hot oven.

Meat turnovers.—Place any chopped cooked meat available on circles of biscuit dough about the size of a saucer. Fold the dough over the meat, crimp the edges, and bake in a hot oven. Vegetables may be combined with the meat filling as desired and the whole may be served with gravy.

Veal or beef birds.—Cut very thin meat into roughly rectangular pieces of a sufficient size for individual servings. Place on each a stuffing of bread crumbs, seasoned with chopped onions and other flavoring vegetables and herbs. Fold or roll up the meat, and skewer in place with toothpicks. Brown the rolls in fat, remove and make gravy from the fat, flour, and stock, if available. Place the rolls in the gravy and cook slowly until tender in a covered baking dish, a steamer, or a fireless cooker.

SOME USES OF RICE.

Department's Food Specialists Suggest Several Ways of Serving This Nutritious Cereal.

The experts of the Office of Home Economics of the department have been studying the uses of rice, a food which can be served in many palatable ways all the year, but which seems particularly appetizing in summer.

Boiled rice prepared in southern fashion, so that all of the grains are kept separate, is sufficiently attractive in appearance to justify its slight wastefulness, except, of course, where strictest economy is necessary. Slowly add a cupful of thoroughly washed rice to a quart of rapidly boiling water, which contains 2 level teaspoonfuls of salt. If carefully done, the boiling (which should continue all of the time the rice is cooking) will not be stopped. Stirring is not permitted, as this will break the rice grains. About 20 minutes is sufficient to cook the rice, which can be tried from time to time by taking one or two grains between the fingers Pour off all the water from the cooked rice, cover with a cloth, and place in a warm part of the stove, so that the grains will swell. To remove the starchy material from the outside of the grains, cooks sometimes turn the cooked rice into a strainer and pour 1 quart of hot water over it before covering with a cloth and allowing to steam and swell. A cupful of raw rice cooked in this way will give over 4 cupfuls of very white and light boiled rice. The water drained off from the rice can be used in soup making to save the starch and mineral matter which it contains.

If one wishes to use a fireless cooker, add a cupful of well-washed rice to 3 cupfuls of boiling water, in which 2 level teaspoonfuls of salt are dissolved. Cook for 5 minutes and then put in a fireless cooker. In 2 hours the rice should be done. If any water remains unabsorbed, it can be drained off. Rice varies somewhat in the amount of water it absorbs, and the housekeeper accordingly should vary the amount of water used.

Rice cooked as described above is excellent when served as a vegetable with meats, as in the well-known "chicken and rice." Such uses of rice are particularly welcome in the period when "old potatoes" are not very palatable and "new potatoes" have not yet appeared in the locality or are high in price in market.

Another dish which has almost as good an appearance may be prepared by cooking rice in a double boiler, without stirring, and using about three cupfuls of water and a level teaspoonful of salt to each cupful of rice. If a more savory dish is desired, skim milk, whole milk, meat broth, strained tomato juice, or vegetable broth may be used in place of water. Rice may also be combined with protein-rich foods, such as milk, cheese, and eggs, for use in place of meat, or with small amounts of vegetables to make the latter "go further." Of course, such a dish does not contain as much tissue-building protein as if it were made entirely of meat, but when the meat provided ordinarily is generous and the aim is to reduce the cost without lessening the attractiveness of the food, such combinations are well worth trying.

The following recipe for an economical dish made with rice and left-over mutton may prove useful.

Steamed Mutton and Rice.

4 cups cooked rice.
2 cups cooked mutton cut into small pieces.
1 teaspoonful salt
Few drops onion juice.
Stock or water as needed.
1 tablespoonful chopped parsley.
½ cup bread crumbs.
1 egg.
¼ teaspoonful pepper.

Grease a mold or a bowl of about 1½ quarts capacity and line with cooked rice. Heat the meat with the other ingredients, using enough stock to make a mixture that is moist, but will hold its shape. Pack the meat in the center of the mold and cover with the remaining rice. Grease the cover of the mold (if a bowl is used, a plate will serve for a cover), steam or cook in water enough partly to cover the mold until the contents are thoroughly heated through. Turn on a hot platter and serve with tomato sauce.

The above recipe, it will be noted, suggests the use of bread crumbs instead of flour for thickening, which is often a way of saving bread which might otherwise be wasted, and which is also one way of securing variety, as a different texture results from that when flour is used.

If one finds it convenient, cold lamb, veal, or chicken may be used in place of mutton in preparing this dish.

As the basis of a sweet dessert, rice is always useful, especially so for invalids and little children. If combined with milk and eggs it makes a very nutritious dish as well as one easily digested. Plain boiled rice, cooked either in water or in milk, and served with a little stewed fruit, maple sirup, honey, or other simple flavor, makes a more wholesome dessert for children than rich puddings or pies because it is less likely to upset the digestion or to destroy the appetite for simple foods.

Cold rice, particularly that which is cooked so that the grains are separate, is a good addition to vegetable salads, combining well with celery, string beans, and tart apple. If one wishes, some chicken cut in small pieces also can be added.

It is well to remember that when rice is used abundantly in the diet it is particularly desirable to include generous amounts of green vegetables and fruits also, in order that a supply of vitamins and of mineral substance adequate in kind and quantity may be provided.

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Food Thrift Series—No. 4.

AN APPEAL TO WOMEN.

Secretary of Agriculture Points Out That in Their Own Homes They Can Aid the Nation's Armies.

The Secretary of Agriculture, in response to requests from many editors for a statement as to service women can render the Nation in the direction of producing and conserving agricultural products, has issued the following:

To the Women of the United States.

"Every woman can render important service to the Nation in its present emergency. She need not leave her home or abandon her home duties to help the armed forces. She can help to feed and clothe our armies and help to supply food to those beyond the seas by practicing effective thrift in her own household.

"Every ounce of food the housewife saves from being wasted in her home—all food which she or her children produce in the garden and can or preserve—every garment which care and skillful repair make it unnecessary to replace—all lessen that household's draft on the already insufficient world supplies.

"To save food the housewife must learn to plan economical and properly balanced meals, which, while nourishing each member of the family properly, do not encourage overeating or offer excessive and wasteful variety. It is her duty to use all effective methods to protect food from spoilage by heat, dirt, mice, or insects. She must acquire the culinary ability to utilize every bit of edible food that comes into her home. She must learn to use such foods as vegetables, beans, peas, and milk products as partial substitutes for meat. She must make it her business to see that nothing nutritious is thrown away or allowed to be wasted.

"Waste in any individual household may seem to be insignificant, but if only a single ounce of edible food, on the average, is allowed to spoil or be thrown away in each of our 20,000,000 homes, over 1,300,000 pounds of material would be wasted each day. It takes the fruit of many acres and the work of many people to raise, prepare, and distribute 464,000,000 pounds of food a year. Every ounce of food thrown away, therefore, tends also to waste the labor of an army of busy citizens.

"Clothing is largely an agricultural product and represents the results of labor on the sheep ranges, in cotton fields, and in mills and factories. Whenever a useful garment is needlessly discarded material needed to keep some one warm or dry may be consumed merely to gratify a passing fancy. Women would do well to look upon clothing at this time more particularly from the utilitarian point of view.

"Leather, too, is scarce and the proper shoeing of armies calls for great supplies of this material. There are only so many pairs of shoes in each hide, and there is a shortage of animals for leather as well as for meat. Anything that can be done to encourage adults or children to take care of their shoes and make them last longer means that so much more leather is made available for other purposes.

"Employed women, especially those engaged in the manufacture of food or clothing, also directly serve their country and should put into their tasks the enthusiasm and energy the importance of their product warrants.

"While all honor is due to the women who leave their homes to nurse and care for those wounded in battle, no woman should feel that, because she does not wear a nurse's uniform, she is absolved from patriotic service. The home women of the country, if they will give their minds fully to this vital subject of food conservation and train themselves in household thrift, can make of the housewife's apron a uniform of national significance.

"Demonstrate thrift in your homes and encourage thrift among your neighbors.

"Make saving rather than spending your social standard.

"Make economy fashionable lest it become obligatory."

EXTRACTS FROM THE PRESIDENT'S APPEAL TO FARMERS.

I take the liberty, therefore, of addressing this word to the farmers of the country and to all who work on the farms: The supreme need of our own nation and of the nations with which we are cooperating is an abundance of supplies, and especially of foodstuffs. The importance of an adequate food supply, especially for the present year, is superlative. Without abundant food, alike for the armies and the peoples now at war, the whole great enterprise upon which we have embarked will break down and fail.

May the nation not count upon them to omit no step that will increase the production of their land or that will bring about the most effectual cooperation in the sale and distribution of their products? The time is short. It is of the most imperative importance that everything possible be done and done immediately to make sure of large harvests.

A MEAT SUBSTITUTE.

Cottage Cheese Contains Larger Percentage of Body-Building Material Than Most Meats.

Cottage cheese is one of the important meat substitutes, say specialists of the United States Department of Agriculture. It contains a larger percentage of protein (the chief material for body building) than most meats and furnishes this material at a lower cost. In every pound of cottage cheese there is about one-fifth of a pound of protein, nearly all of which is digestible. Meats, on the other hand, usually contain less protein and besides have a certain waste, such as bone and other inedible material. A pound of cottage cheese daily would supply all the protein required by the ordinary adult engaged in a sedentary occupation.

The following table shows that cottage cheese is much cheaper than most meats in furnishing protein for the diet.

For supplying protein, one pound of cottage cheese equals—

1.27 pounds sirloin steak.	1.44 pounds smoked ham.
1.09 pounds round steak.	1.58 pounds loin pork chop.
1.37 pounds chuck rib beef.	1.31 pounds hind leg of lamb.
1.52 pounds fowl.	
1.46 pounds fresh ham.	1.37 pounds breast of veal.

In addition to protein, energy for performing body work must be furnished by food. As a source of energy also cottage cheese is cheaper than most meats at present prices. The following table shows the comparison when energy is considered.

On the basis of energy supplied, one pound of cottage cheese equals—

8½ ounces sirloin steak.	5 ounces smoked ham.
11¼ ounces round steak.	6 ounces loin pork chop.
11¼ ounces chuck rib beef.	7⅛ ounces hind leg of lamb.
10¾ ounces fowl.	
5½ ounces fresh ham.	12¾ ounces breast of veal.

How to Make Palatable and Nourishing Food from Skim Milk.

Cottage cheese can be made from skim milk which might otherwise go to waste. After removing the cream for coffee, the skim milk that is not needed for puddings, gravies, etc., can easily be made into cottage cheese. If the milk is sweet it should be placed in a pan and allowed to remain in a clean, warm place at a temperature of about 75° until it clabbers. The clabbered milk should have a clean, sour flavor. Ordinarily this will take about 48 hours, but when it is desirable to hasten the process a small quantity of clean-flavored soured milk may be mixed with the sweet milk. As soon as

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the milk has thickened to the consistency of thin jelly, it should be cut into pieces the size of a walnut, after which the curd should be stirred thoroughly with a spoon.

Place the pan of broken curd in a kettle of hot water so as to raise the temperature to 100° F. Cook at that temperature for about 20 minutes, during which time stir vigorously with a spoon for one minute at five-minute intervals. At the conclusion of the heating, pour the curd and whey into a small cheesecloth bag (a clean salt bag will do nicely) and hang the bag on a fruit-strainer rack to drain. After 5 or 10 minutes, work the curd toward the center with a spoon. Raising and lowering the ends of the bag helps to make the whey drain faster. To complete the draining, tie the ends of the bag together and hang it up. Since there is some danger that the curd will become too dry, draining should stop when the whey ceases to flow in a steady stream. The curd is then emptied from the bag and worked with spoon or butter paddle until it becomes fine in grain, smooth, and of the consistency of mashed potatoes. Sour or sweet cream may be added also, to increase the smoothness, palatability, and flavor. Then it is salted according to taste, about one-quarter ounce to a pound of curd.

COWPEAS AS FOOD.

Comparable with Meat in Nutritive Value—May Well Be Used More Extensively as Human Food.

Cowpeas, or southern field peas, which, despite their name, are really a kind of bean, are, like other dry beans, comparable with meat in the kind of nourishment contained in them, and can, in the opinion of specialists of the United States Department of Agriculture, well be used more extensively as human food. They are commonly used in the South, where they are extensively grown, but are practically unknown in the North and Northwest, where other, often more expensive, beans are consumed in large quantities.

There are many varieties of cowpeas, of which the white and black-eye sorts are considered particularly desirable for the table. In palatability, digestibility, and nutritive value they compare favorably with other beans, while their delicate and pleasing flavor lead many to consider them equal, if not superior, to the latter.

Cowpeas are used on the table in three forms—in the pod, shelled green, and shelled dry, corresponding, respectively, to string beans, shelled green beans, and dried beans, and calling for much the same methods of preparation for the table. The dry cowpeas are by far the most common. Like dry navy or lima beans, cowpeas may be boiled with a bit of fat meat or baked and served in place of lean meat or other food rich in nitrogen. Boiled and mashed through a colander, the beans form a foundation for numerous dishes. They may be creamed with milk and butter, like mashed potatoes; formed into croquettes with bread crumbs and fried or baked; made into a loaf with bread crumbs, minced vegetables, milk, and seasonings, or made into soup.

A delicious combination dish, called "Hopping John," may be made as follows: Boil 1 quart of cowpeas and a scant pint of rice separately and mix together when done. The rice should be seasoned after it is cooked. Bacon or a beef bone boiled with the cowpeas adds a desirable flavor to the dish. Recipes for other cowpea dishes follow.

Baked Cowpeas.

Cook 1 quart of large, white, dry cowpeas slowly in water until they begin to soften. This will require five or six hours. Put them into a bean pot, add one-half pound of salt pork, and either 1 tablespoonful of molasses or a small onion cut up fine. Cover with water and bake slowly six or seven hours. It is well to have the pot covered except during the last hour.

Cowpea Soup.

1 tablespoon butter or pork fat.
1 tablespoon finely chopped onion.
1 stalk celery, finely chopped.
1 cup dry cowpeas.
Salt.

Soak the peas 8 or 10 hours in water enough to cover. Fry the vegetables in the butter, add the peas in the water in which they were soaked, and cook (preferably in a double boiler) until the peas are tender. Put the mixture through a sieve and add water enough to bring it to the consistency preferred. Reheat. If this soup is thickened with 1 tablespoouful of flour mixed with a little water, the pea pulp will not sink.

Purée of Cowpeas.

(Used like mashed potatoes.)

Soak 1 pint of dry cowpeas in cold water over night. Cook until soft in just enough water to cover. Drain and pass through a sieve. Season with salt, pepper, one-half cupful of cream (or milk and a tablespoonful of butter or other fat), and 2 teaspoonfuls of brown sugar. Beat thoroughly, reheat, and serve like mashed potatoes.

Baked Cowpeas and Cheese.

(Substitute for meat roll.)

1 tablespoon butter.
1 tablespoon finely chopped onion.
1 tablespoon finely chopped sweet green pepper or celery.
2 cups cooked cowpeas.
½ cup grated cheese.

Press the peas through a sieve to remove the skins, and mix with the cheese. Cook the onion and pepper or celery in the butter or other fat, being careful not to brown, and add them to the peas and cheese. Form the mixture into a roll, place on a buttered dish and cook in a moderate oven until brown, basting occasionally with butter or other fat and water. Serve hot or cold like meat.

An excellent way of providing iron-rich greens in the winter diet is to put up young beets with the tops left on.—Office of Home Economics, United States Department of Agriculture.

"Many a Mickle Makes a Muckle."

A SLICE OF BREAD.

A single slice of bread seems an unimportant thing. In many households one or more slices of bread daily are thrown away and not used for human food. Sometimes stale quarter, or half, loaves are thrown out.

Yet one good-sized slice of bread—such as a child likes to cut—weighs an ounce. It contains almost three-fourths of an ounce of flour.

If every one of the country's 20,000,000 homes wastes on the average only one such slice of bread a day, the country is throwing away daily over 14,000,000 ounces of flour—over 875,000 pounds, or enough flour for over a million 1-pound loaves a day. For a full year at this rate there would be a waste of over 319,000,000 pounds of flour—1,500,000 barrels—enough flour to make 365,000,000 loaves.

As it takes 4½ bushels of wheat to make a barrel of ordinary flour, this waste would represent the flour from over 7,000,000 bushels of wheat.

Fourteen and nine-tenths bushels of wheat on the average are raised per acre. It would take the fruit of some 470,000 acres just to provide a single slice of bread to be wasted daily in every home.

To produce this much flour calls for an army of farmers, railway men, flour-mill people. To get the flour to the consumer calls for many freight cars and the use of many tons of coal.

But some one says, a full slice of bread is not wasted in every home. Very well—make it a daily slice for every 4 or every 10 or every 30 homes—make it a weekly or monthly slice in every home—or make the wasted slice thinner. The waste of flour involved is still appalling—altogether too great to be tolerated when wheat is scarce.

Any waste of bread is inexcusable when there are so many ways of using stale bread to cook delicious dishes.

The United States Department of Agriculture, Washington, D. C., or your State agricultural college will tell you how to use stale bread in many ways.

FAT IN COOKERY.

How Any One of Several Commonly Used Food Materials May Be Substituted for Another.

Food materials differ in price with place and with season, and when a housekeeper wishes to follow a recipe she often finds that some of the ingredients called for are either too expensive or are very difficult to obtain. If she understands the composition of foods, she can often, under these circumstances, substitute some other material with good results. In order to do this, the housekeeper needs at least a general knowledge of the composition and properties of foods and is greatly helped by experience. In the main it is knowledge of foods and experience which free the cook from slavery to a recipe.

Experts in home economics at the United States Department of Agriculture have studied the matter recently with respect, especially, to the uses of fat in cookery.

For example, chicken fat or sour cream can often be substituted for part or all of the butter in cake making, but if this is to be done successfully the cook must know how much of either one it takes to supply the fat contained in the amount of butter for which the recipe calls. Cream contains more water than butter does, and rendered chicken fat usually far less, because it has been heated and the water which it originally contained driven off.

Egg yolks, which are rich in fat and which are often left over from cake making, may be used to enrich soups or may be combined with milk to make custards which resemble the cream in composition and can be used as cream is on desserts. Cheese is often added to soups or milk sauces to flavor them and also to make them richer in protein, but one should remember that it adds greatly to the fat also, and so the amount of butter should either be lessened or left out entirely, according to the amount of cheese used. It is convenient in these cases to know just how much fat is contained in an egg yolk or in a given amount of cheese.

Sometimes chopped nuts, which contain much fat, are added to recipes which did not originally call for them, with the idea of making the dish more appetizing. In this case also the nut fat should be taken into account, and the amount of butter or other shortening should be reduced accordingly; otherwise the dish is almost sure to be overfat.

It is easy to find out from bulletins published by the United States Department of Agriculture the percentage of fat in different food materials, and one can then compute the amount in a given weight of milk, cream, cheese, and so on. But the home cook does not usually weigh all her food materials, and still less does she like to do problems in arithmetic as a part of her baking. She measures her materials, using level teaspoonfuls, tablespoonfuls, and cupfuls, and uses them as her recipe or her general knowledge of cookery suggests. The more reliable data she has, the better results can she count on.

With these facts in mind, the following table has been made, which shows in housekeepers' terms the volume of fat in several commonly used food materials.

Amount of fat in various common food materials.[1]

Food material.	Quantity.	Fat content.
Whole milk	1 cup	About 2 level teaspoons.
Ordinary cream (18 per cent).	1 cup	About 3 level tablespoons.
Double or whipping cream (40 per cent).	1 cup	About 6 level tablespoons.
Butter	1 cup	14 level tablespoons.
English walnut meats (finely chopped).	1 cup, or 8 ounces.	Nearly ⅔ cup.
Peanuts (finely chopped).	1 cup, or 8 ounces.	A little more than ½ cup.
Chocolate	1 square, or 1 ounce.	1 scant tablespoon.
Cheese (grated)	1 cup, or 4 ounces.	2½ level tablespoons.
Egg	1	A little more than 1 level teaspoon.
Egg yolk	1	Do.
Egg white	1	Only a trace.
Egg yolks	1 cup	About 5 level tablespoons.
Egg whites	1 cup	½ level teaspoon.
Vegetable oil or lard or drippings from which all water has been driven off by heat.	1 cup	1 cup.

[1] In making these estimates it is assumed that 3 level teaspoons make 1 level tablespoon, and 16 level tablespoons 1 cup.

An illustration of how the facts in the table may be used is given below. The proportions for a good cup cake, in which fat is supplied by butter and milk, are as follows:

⅔ cup butter.
2 cups sugar.
4 eggs.
1 cup milk (containing 2 teaspoons fat).
3½ cups flour.
4 teaspoons baking powder.

In this recipe a cupful of sour cream (18 per cent) can be substituted for the cupful of milk. It contains, as the table shows, a little more than 2 tablespoonfuls more fat and, of course, correspondingly less water. The 2 tablespoonfuls of fat can be taken from the butter, which will reduce the butter to ½ cupful, and 2 tablespoonfuls of water can be added. The regular allowance of soda, ½ teaspoonful for a cupful of sour milk or cream, should be used and the baking powder reduced to 3½ teaspoonfuls.

This illustration will serve to show how a knowledge of facts will help housekeepers to use fats economically in cookery.

Because of its low starch content, soybean flour is used as a constituent in many so-called diabetic breads, biscuits, etc.

DASHEEN FINDS FAVOR.

Root Crop Comparable to the Potato Newly Introduced in South and Proves to Be Valuable Food.

The dasheen, a root crop introduced into this country from Trinidad within recent years by the United States Department of Agriculture, is now grown by a considerable number of farmers and truckers in the South, and promises to become a valuable member of the group of domestic vegetables, such as the potato, which furnish starchy foods. The new vegetable is closely related to the taro, which is an important factor in the food supply in portions of the Tropics. The dasheen is itself primarily a tropical plant. It can be grown successfully, however, not only in the warmer portions of Florida but in other sections of the South as far north as South Carolina. The edible portion of the plant includes a large central corm and a number of tubers, of much smaller size, attached to and around the corm.

The value of the dasheen, it is believed, will be as a crop supplemental to rather than a substitute for the potato. The fact that the dasheen matures in the fall, when potatoes must be obtained from northern producing sections, should make the new plant especially valuable in the economics of the southern farmer.

In food value the dasheen is comparable to the potato, though it contains a smaller proportion of water and a greater proportion of protein, starch, and sugar than the latter. The new vegetable may be prepared for the table as potatoes usually are, or may be made into flour and used in baking. The tender shoots forced from the large corms may be prepared like asparagus, and make a pleasing dish in that form.

The dasheen is grown from whole tubers weighing a few ounces. They require a frostless season of at least seven months, with plenty of moisture. A moist but well-drained, rich, sandy loam has been found to be a satisfactory soil for dasheen culture. A large proportion of either clay or muck in the soil produces strong-flavored, tough corms, which are often unfit for table use. Large crops are produced under such conditions, however, and make excellent stock feed.

The crop is planted in February in southern Florida and as late as the early part of April in South Carolina. The plants are spaced about 3½ by 3½ feet. Dasheens may be dug for home use by the middle of September, and the main crop can be harvested at any time after the last of October. The clumps of tubers are left on the surface of the ground for several days to dry. The tops and small roots are then broken off and the dasheens placed in storage.

SALAD PLANTS.

Many Wild Plants May Be Cooked for Greens or Used in Salads—Methods of Preparation.

Many of the wild plants that accompany the advent of spring can be used advantageously in the household. Before modern methods of marketing, storing, and preserving made it possible to have vegetables throughout the year, these plants were eagerly sought for by housekeepers to furnish relief from the monotonous winter fare. Even now they will form a welcome change, and, above all, they may be had for the trouble of picking, as substitutes for purchased greens.

Foremost among these plants is the dandelion. Its use as a vegetable is so common that it is sold in many city markets. Occasionally it is cultivated by market gardeners, but much more frequently the plants sold are wild ones and ought to cost less than cultivated greens. When some one in the family can dig them near home, there can be no doubt as to the economy of using them. If they are taken from the lawn, there is the further advantage of removing a troublesome weed—providing always that the digging is carefully done. Only the dandelion should be pulled, not the grass around it, and the root should be removed, not broken off at the top, else several crowns of leaves may grow in the place of one. As in most stem and leaf vegetables, the texture and flavor are both best when the plants are young.

Growing, as they do, close to the surface of the ground, dandelion greens are likely to be full of earth and grit and must be carefully washed and rinsed in several waters. The water in which they have just been rinsed should never be poured out of the pan over the greens, but the greens should be lifted out of the water, so that the dirt which has settled to the bottom may not get back on the leaves, and for the same reason the cooked "greens" should be lifted out of the water in which they are boiled.

The most common way of using dandelions is as a potherb, or greens. As with most green vegetables, it is a mistake to cook them more than is needed to make them tender. If they are boiled with one-eighth teaspoonful (level) of cooking soda to each quart of greens used, they will keep their color better. Young dandelions may also be used uncooked as salad, a custom less common in this country than in Europe, where the tender plants are sometimes blanched like asparagus. If more dandelions are available than can be used while they are fresh, they may be preserved for future use. They may be canned by the method used by the canning clubs for spinach, or they may be "put down" in salt according to a household method. In many homes it is a common practice to preserve dandelion greens with salt in stone crocks, putting in first a layer of greens, then a layer of salt, then more greens, and so on, until the crock is filled. The dandelions are then covered with a close-fitting plate or board, on which a weight (a clean piece of marble or a stone) is placed to keep the greens packed solid.

Other wild plants used as potherbs are curly dock, pigweed or lamb's quarters, chickweed, mustard shoots, purple milkweed shoots, young horse-radish leaves, marsh marigold (sometimes called American cowslip), poke sprouts, pepper cress, purslane or "pusley," and in the Southwestern States some sorts of cactus leaves and stalks. If the bitter or acrid flavor is too strong, as is frequently the case with horse-radish leaves or poke sprouts, for example, it may be lessened by changing the water once or twice during cooking. Rightly cooked, all of the plants mentioned are harmless. Marsh marigold is sometimes said to be harmful, but this is not the case with the cooked greens.

A little later in the season a few other potherbs appear, which, though cultivated rather than wild, are so seldom utilized that to use them means as much saving as if no care had been spent to raise them. Among these are the tops of turnips, radishes, beets, and onions, all of which may be cooked like spinach or dandelion. The onion tops should be cut up into inch lengths before cooking. They are excellent served on toast. Cabbage sprouts are also a favorite when they are obtainable.

There are also a few salad plants to be had for the picking. Like all food materials eaten without cooking, they must be very carefully washed before using. Water cress is perhaps the one most generally known. It is also cultivated. It should never be eaten if it has been grown where there is any chance of contamination from typhoid fever or other disease. This is true of any vegetable that is uncooked, but must be remembered especially in connection with plants growing near water, since the latter may have carried the disease germs a long way from the place where the illness was. Pepper grass or pepper cress is another wild plant useful for flavoring other salads, if too sharp to use alone. Sorrel may also be used to give a pleasant acid taste to lettuce or other mild-flavored salads, though the ordinary wild kind is too sour to use in quantity as a potherb like the varieties cultivated for that purpose.

Of plants cultivated in the flower garden the leaves and unripe seeds of nasturtiums may be mentioned as a seasoning for salads.

It is impossible to make sweet, clean flavored butter from old, unclean cream.

MEAT IN HOT WEATHER.

A Few Simple Precautions for the Housewife Who Does Not Want Her Supplies to Spoil.

A few simple precautions will aid the housewife in keeping meat untainted in hot weather. It is, of course, common knowledge that the higher the temperature, the quicker meat will spoil, but the family's supplies are not absolutely at the mercy of the thermometer. Ice and cleanliness are two great weapons of defense.

For many families a refrigerator is obviously out of the question, but it is perhaps better to have no refrigerator at all than a neglected one. Merely to wash it out occasionally does little good; it should be thoroughly scalded at frequent intervals, in particular the drain. This, if overlooked, is apt to harbor fungous growths, which may spread to the food. On one occasion a man applied to the department because he had found that a joint of beef placed in his refrigerator had turned a peculiar bright red. Upon examination it was ascertained that the meat was covered with a peculiar fungous growth due entirely to the condition of the refrigerator. Growths of this kind do not always advertise themselves so prominently and there may be much evil in an ice box that the eye can not detect.

If the refrigerator drain is not thoroughly cleaned, moreover, it is likely to become choked, the water is not carried off quickly enough and little pools are left standing in the interior. Dampness is one of the conditions most favorable to bacterial growth. An ice box in this state will not protect food long. It is in fact a wise precaution to wipe the interior of a refrigerator every day with a dry cloth.

The temperature of the average refrigerator is higher than most persons suppose, and in those households where a regular supply of ice is not obtainable a cool cellar, a spring house, or the depths of a well may serve somewhat the same purpose. On farms where there is an ice house the meat may be placed in some form of closed retainer and buried in the ice. In any event, the meat must be carefully screened from flies. The danger from infection from these pests has been pointed out many times, but familiarity breeds contempt and they still persist. The fly not only does the meat itself no good, but it may readily deposit upon it some infection, which is carried in turn by the meat into the human system. Some flies will deposit their eggs on the meat and these in a short time will become maggots, and the meat is "flyblown."

Much sickness that is popularly ascribed to ptomaine poisoning or to bad food in general is really caused in some such way as this, the food, in itself perfectly wholesome,

acting merely as a mechanical carrier for the "germs" which cause the trouble. Some of these sorts come from the human intestine, and their presence is a sure indication that filth is present, even if the amount is too small to be seen. Filth of this kind may be carried by dust, but it more often comes from soiled hands. One might wish that every kitchen could have the sign found in some well-managed food factories—"When you leave the room for any purpose, wash your hands before you return to work."

Germs which grow in foods and cause illness grow very rapidly, particularly if the food is a little warm, and are not destroyed unless the food is well cooked before serving. Simply "warming up" is not enough, as was found in a case of illness recently reported after eating some warmed-up creamed vegetable. Certain kinds of food—creamed chicken, or custard, or warm vegetables, for example—are excellent culture mediums for bacteria which may have been introduced into them by accident. For this reason it is a safe rule to have as short a time as possible intervene between the preparation of food and its consumption. Broth is another excellent medium and in consequence should be drained off if it is intended to keep the meat for any length of time before serving. If the broth is used also it should be boiled thoroughly first. All food, cooked or uncooked, should be kept in a clean, cool place in order to reduce the danger of infection to a minimum.

When meat must for any reason be kept for unusually long periods of time or when the conditions are unusually unfavorable scalding may be resorted to advantageously. Dropping the meat into boiling water for a few minutes will not seriously affect its flavor when it ultimately appears upon the table, and it will put it in a much better condition for keeping. It is important, however, that it be dipped in a large body of boiling water. If only a small amount of water is used, the introduction of the meat will lower the temperature to such an extent that the whole process becomes worthless. With such meats as veal or pork, which are always—or ought to be—thoroughly done, the precaution can be carried further and the joints partially cooked before being stored away. Care should be taken, however, to see that the recooking is thoroughly done.

Hot weather also calls for additional precautions on the part of the housewife in regard to canned products. Once these have been opened and exposed to the air they spoil as quickly, if not more quickly, than fresh food. The contents of a can should therefore be disposed of without delay. In no event should they be left in the can after it has been opened, but should be used at once unless the housekeeper wishes to "air" the canned material, which some believe is desirable. If this is done, the can contents should be transferred to a clean earthen or glass dish and put away for an hour or two in a cool place where dust will not reach it.

"Many a Mickle Makes a Muckle."

ONE-HALF CUP OF MILK.

Half a cup of milk—whole, skimmed, or sour—a seemingly trifling matter—hardly worth the trouble to keep or use.

In many households quite a little milk is wasted—left uncovered in glasses—regarded as useless because the cream has been skimmed off—allowed to sour—poured down the sink or thrown out.

Now, if every home—there are 20,000,000 of them—should waste on the average one-half cup daily, it would mean a waste of 2,500,000 quarts daily—912,500,000 quarts a year—the total product of more than 400,000 cows.

It takes a lot of grass and grain to make that much milk—and an army of people to produce and deliver it.

But, every household doesn't waste a half cup of milk a day? Well, say that one-half cup is wasted in only one out of a hundred homes. Still intolerable—when milk is so nutritious—when skim milk can be used in making nutritious soups and cereal dishes—when sour milk can be used in bread making or for cottage cheese.

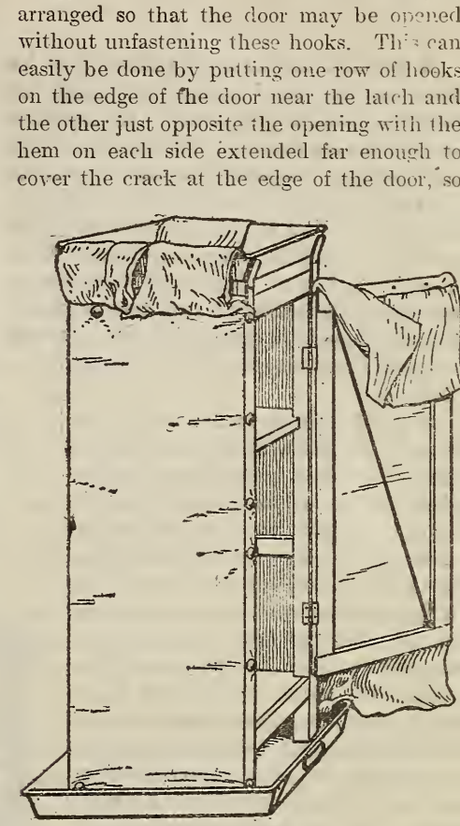
The United States Department of Agriculture, Washington, D. C., or your State agricultural college will tell you how to use left-over milk—sweet, skimmed, or sour.

ICELESS REFRIGERATOR.

Where Ice is Not Obtainable This Homemade Refrigerator Will Give Satisfactory Service.

A companion convenience to the fireless cooker for the hot summer days is the iceless refrigerator, or milk cooler. This consists of a wooden frame, covered with canton flannel or some similar material. It is desirable that the frame be screened, although this is not absolutely necessary. Wicks made of the same material as the covering rest in a pan of water on top of the refrigerator, allowing the water to seep down the sides. When evaporation takes place the heat is taken from the inside, with a consequent lowering of the temperature. On dry, hot days a temperature of 50° can be obtained in this refrigerator. The following description will aid in the construction of this device:

Make a screened case 3½ feet high with the other dimensions 12 by 15 inches. If a solid top is used, simply place the water pan on this. Otherwise fit the pan closely into the opening of the top frame and support it by 1-inch cleats fastened to the inside of the frame. Place two movable shelves in the frame, 12 to 15 inches apart. Use a biscuit pan 12 inches square on the top to hold the water, and where the refrigerator is to be used indoors have the whole thing standing in a large pan to catch any drip. The pans and case may be painted white, allowed to dry, and then enameled. A covering of white canton flannel should be made to fit the frame. Have the smooth side out and button the covering on the frame with buggy or automobile curtain hooks and eyes, arranged so that the door may be opened without unfastening these hooks. This can easily be done by putting one row of hooks on the edge of the door near the latch and the other just opposite the opening with the hem on each side extended far enough to cover the crack at the edge of the door, so



Iceless Refrigerator.

as to keep out the warm, outside air and retain the cooled air. This dress or covering will have to be hooked around the top edge also. Two double strips one-half the width of each side should be sewed on the top of each side and allowed to extend over about 2½ or 3 inches in the pan of water. The bottom of the covering should extend to the lower edge of the case.

Place the refrigerator in a shady place where air will circulate around it freely. If buttons and buttonholes are used on the canton flannel instead of buggy hooks, the cost should not exceed 85 cents.

Stale bread can be utilized in a variety of ways in combination with vegetables and meats, in preparing cakes, breads, and puddings, and in other ways.

Much food is thrown away because so many people do not know how to utilize left-overs or will not take the trouble to keep and prepare them. Left-over cereal can be reheated or combined with fruits, meats, or vegetables into appetizing side dishes. Even a spoonful of cereal is worth saving to thicken soup, gravy, or sauce.

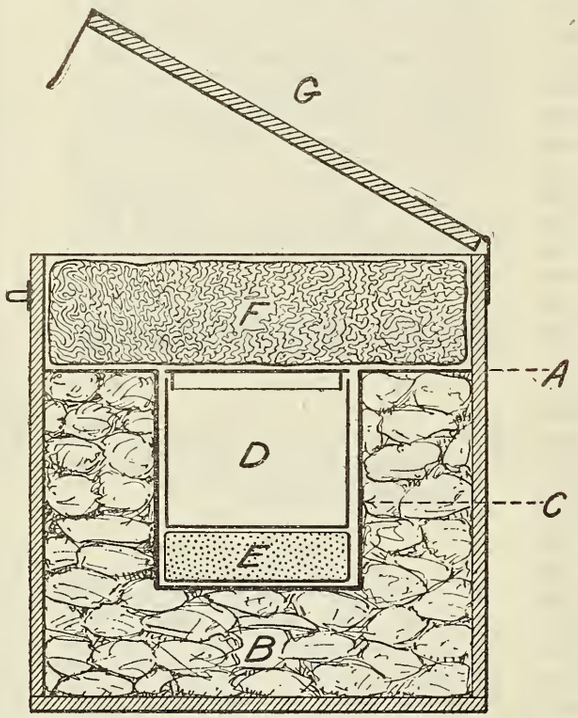
FIRELESS COOKER.

How to Make a Satisfactory Device at Home at Low Cost—Directions for Its Use.

A very satisfactory fireless cooker may be made in the home at relatively slight expense, according to specialists of the Office of Home Economics of the Department of Agriculture. The outside of the cooker may be a tightly built wooden box, an old trunk, a small barrel, a large butter or lard firkin or tin, or a large galvanized-iron bucket with close-fitting cover. In general, a well-built, conveniently sized box is perhaps most satisfactory, though the cookers entirely incased in metal have the advantage of being fireproof.

If a box is to be used, its size will depend on the size of the cooking kettle to be used in it and on whether there are to be one or two compartments. It must be large enough to allow for at least 4 inches of packing material all around the "nest" in which the cooking kettle is to be placed. For the sake of cleanliness and convenience the nest should be lined with metal and should be a trifle larger than the cooking utensil. If an extra source of heat, such as a hot brick or plate, is to be used, a metallic lining for the nest is imperative. For this purpose a galvanized-iron or other metal bucket may be used or, better still, a tinsmith can make a lining of galvanized iron or zinc which can be provided with a rim to cover the packing material. In case no hot stone or plate is to be used in the cooker the lining can be made of strong cardboard.

For the packing and insulating material a variety of substances may be used. Asbestos and mineral wool are good and have the additional advantage that they do not burn. Ground cork (such as is used in packing Malaga grapes), hay, excelsior, Spanish moss, wool, and crumpled paper may also be used satisfactorily. Of the inexpensive materials that can be obtained easily, crumpled paper is probably the most satisfactory, since it is clean and odorless and, if properly packed, will hold the heat better than some of the others. To pack the container with paper, crush single sheets of newspaper between the hands. Pack a layer at least 4 inches deep over the bottom of the outside container, tramping it in or pounding it in with a heavy stick of wood. Stand the container for the cooking vessel, or the lining for the nest, in the center of this layer and pack more crushed papers about it as solidly as possible. If other packing, such as excelsior, hay, or cork dust, is used, it should be packed in a similar way. Where an extra source of heat is to be used, it is much safer to pack the fireless cooker with some noninflammable material, such as asbestos or mineral wool. A cheap and easily obtained substitute are the small cinders sifted from coal ashes, preferably those from soft coal, which may be obtained at the boiler house of any mill. The cinders from hard coal burned in the kitchen range will do, however. Experiments with this material made by home-economics specialists of the department showed that it is very nearly as satisfactory as crumpled paper as a packing material. If a fireproof packing material is not used a heavy pad of asbestos paper should be put at the bottom of the metal nest and a sheet or two of asbestos paper should be placed between the lining of the nest and the packing material. Whatever packing material is used, it should come to the top of the container for the kettle, and the box should lack about 4 inches of being full. A cushion or pad must be provided to fill completely the space between the top of the packing and the cover of the box after the hot kettles are put in place. This should be made of some heavy goods, such as denim, and stuffed with cotton, crumpled paper, or excelsior. Hay may be used, but will be found more or less odorous.



Longitudinal section through fireless cooker, showing details of the construction: *A*, Outside container (wooden box, old trunk, etc). *B*, Packing or insulating material (crumpled paper, cinders, etc.). *C*, Metal lining in nest. *D*, Cooking kettle. *E*, Soapstone plate, or other source of heat. *F*, Pad of excelsior for covering top. *G*, Hinged cover of outside container.

The kettles used for cooking should be durable and free from seams or crevices, which are hard to clean. They should have perpendicular sides and the covers should be as flat as possible and provided with a deep rim shutting well down into the kettle to retain the steam. It is possible to buy kettles made especially for use in fireless cookers; these are provided with covers which can be clamped on tightly. The size of the kettle should be determined by the quantity of food to be cooked. Small amounts of food can not be cooked satisfactorily in large kettles, and it is therefore an advantage to have a cooker with compartments of two or more different sizes. Kettles holding about 6 quarts are of convenient size for general use. Tinned-iron kettles should not be used in a fireless cooker, for, although cheap, they are very apt to rust from the confined moisture. Enameled-ware kettles are satisfactory, especially if the covers are of the same material. Aluminum vessels may be purchased in shapes which make them especially well adapted for use in fireless cookers and, like enameled ware, they do not rust.

How to Use the Fireless Cooker.

Obviously the fireless cooker must be used with intelligence to obtain the best results. It is best suited to those foods which require boiling, steaming, or long, slow cooking in a moist heat. Foods can not be fried in it, pies can not be baked successfully in the ordinary fireless cooker, nor can any cooking be done which requires a high, dry heat for browning. Meats, however, may be partially roasted in the oven and finished in the cooker, or may be begun in the cooker and finished in the oven with much the same results as if they were roasted in the oven entirely. The classes of food best adapted to the cooker are cereals, soups, meats, vegetables, dried fruits, steamed breads, and puddings.

When different foods are cooked together in the fireless cooker they must be such as require the same amount of cooking, since the cooker can not be opened to take out food without allowing the escape of a large amount of heat and making it necessary to reheat the contents. It would not do to put foods which need about one and one-half hours to cook into the cooker with a piece of meat which would stay several hours.

The size of the container used in cooking with the fireless cooker should be governed according to the amount of food to be cooked. Small quantities of food can not be cooked satisfactorily in a large kettle in the fireless cooker. If a large kettle must be used, better results will be obtained if some other material which holds heat fairly well is used to fill up the empty space. This may be accomplished in several ways. One is to put the small quantity of food to be cooked into a smaller, tightly closed kettle, fill the large kettle with boiling water and put the

small kettle into it, standing it on an inverted bowl or some other suitable support. This boiling water will take up and hold the heat better than air would. Several smaller dishes (if tightly covered) may be placed in the kettle surrounded by boiling water. Baking powder or other tins often are found useful for this purpose. Another way is to place one food in a basin which just fits into the top of a large kettle and to let some other material, some vegetable perhaps, cook in the water in the bottom of the kettle. Two or more flat, shallow kettles placed one on top of the other so as to fill the cooker enable one to cook small amounts of different foods successfully. Such kettles, made especially for use in fireless cookers, may be purchased.

Time Required for Cooking.

The time which each kind of food should stay in the cooker depends both on the nature of the food and on the temperature at which it remains inside the cooker, and before recipes for use with the fireless cooker can be prepared one must have some means of knowing how temperatures are preserved in it. In experiments made in the Office of Home Economics a 6-quart kettle was filled with boiling water and put into the cooker, the packing of which happened to be newspaper. The temperature of the water, which was 212° F. when put into the cooker, was found to be 172° F. after four hours had elapsed and 155° F. after eight hours had elapsed. This shows the advisability of the common custom of allowing food to remain undisturbed in the cooker for at least six or eight hours, or in some cases overnight. If a soapstone, hot brick, or other extra source of heat is used, less time will be required. Materials which are denser than water (sugar sirup as used in cooking dried fruit), and therefore can be heated to a higher degree, will keep up the temperature longer when put into the cooker. Thus the density of the food material, as well as the amount and the length of time that the apparatus retains the heat, must be taken into consideration in determining how long different materials must be cooked in the cooker.

The recipes for dishes to be prepared in the fireless cooker differ somewhat from those for foods cooked in the ordinary way, chiefly in the amount of water or other liquids called for. Less liquid should be put into the food to be prepared in an ordinary fireless cooker, since there is no chance for water to evaporate. The cook must be guided largely by experience in deciding how long food should be heated before being put into the cooker and how long it should be allowed to remain there.

Delicious table sirup can be made from cull and waste apples by home methods developed by the United States Department of Agriculture.

USES FOR HONEY.

Cakes Made with It Keep Longer—Boiling and Skimming Unnecessary—Tested Recipes for Desserts.

Various ways in which the housewife can use honey to advantage are suggested in a new publication of the department—Farmers' Bulletin 653, "Honey and its uses in the home." In this country honey has hitherto not been in as common use as in Europe, especially in cookery. It is, however, a comparatively simple matter to substitute it in many recipes for common sugar or for molasses, and when this is done the resulting flavor is novel and agreeable.

One of the great advantages in the use of honey is that cakes made with it will keep much longer than those made with sugar. A honey cake made with butter, for instance, will keep its quality until the butter grows rancid, and one made without butter will keep fresh for months. For this reason honey is especially useful in recipes that call for no butter. Icing made with honey has the same advantage, and some icing made in the experimental laboratory of the Department of Agriculture was found at the end of 10 months to be as soft and in as good condition as when it was first made.

The experiments conducted by the department indicate that many of the instructions in the old cookbooks for the preparation of honey are unnecessarily elaborate. For example, it used to be thought that honey had to be brought to the boiling point and then skimmed and cooled. Since honey is extremely likely to boil over, this process requires great care. Experiments showed, however, that it appears to be quite unnecessary, and it is probable that the notion arose at a time when ordinary commercial honey contained more impurities than at present. Similarly, the older recipes say that the dough should be kept at least one day before the soda is added. No evidence to support this theory was found by the investigators. On the other hand, however, they did discover that dough containing honey can be more easily kneaded if allowed to stand for several days. Again, the use of "potash" is recommended in most of the recipes in foreign cookbooks as a means of raising the dough. The properties of potash are quite similar to ordinary baking soda, and there seems no reason why the latter should not do just as well. Baking soda is a common kitchen commodity in America, and potassium bicarbonate, the potash of the cookery book, is almost unknown for household purposes. As a matter of fact, a little experience will enable any competent cook to substitute honey successfully for sugar in bread, cake, preserved fruits, sauces, and candies. It is safe to estimate that a cupful of honey will sweeten a dish about as much as a cupful of sugar, but since honey contains water in addition, there is less need for milk or other liquids. For practical purposes it is accurate enough to consider that for each cupful of honey a quarter of a cupful is added to the recipe. If these facts are kept in mind special honey recipes are unnecessary.

Honey is marketed in two forms, known respectively as comb honey and extracted honey, the former being used much like jam or marmalade and the latter either in that way or for cooking. In the past there has been some prejudice against extracted honey—or honey removed from the comb—because it was believed that this was frequently adulterated. However prevalent this practice may have been in the past, recent legislation and the efforts of honey producers themselves have made it dangerous and unprofitable. There is now, it is believed, little adulterated extracted honey on the market. Comb honey is practically certain to be the pure product of the hive, because it can only be adulterated by processes which cost more than they save. When sold at retail there is now comparatively little difference in the cost of comb and extracted honey, but the latter can be purchased at wholesale very much cheaper. The reason for this is that the producer of comb honey makes a product which is practically ready to be delivered to the consumer. Moreover, it costs the bee keeper less to produce extracted honey, while the wholesaler who purchases extracted honey has several processes to go through with before he can sell it at retail. If the housewife is willing to do these herself, she can effect a considerable saving.

The simplest and perhaps most popular way of using honey is to serve it like jam or sirup with bread, pancakes, etc. When used in this way an ounce of honey may be regarded as the equivalent of an ounce of jam. When intended for sirup it is sometimes diluted with hot water, not only to make it less sweet, but also easier to pour. The housewife will also find some form of tart fruit served with honey, cottage cheese, and bread and butter an attractive combination and an economical substitute for the much prized and very expensive Bar-le-Duc currants, which are themselves often cooked in honey and served with cream cheese and crackers. The following are typical of an almost endless number of honey recipes:

Honey and Nut Bran Muffins.

½ cup honey.
1 cup flour.
From ¼ to ½ teaspoon soda.
¼ teaspoon salt.
2 cups bran.
1 tablespoon melted butter.
1½ cups milk.
¾ cup finely chopped English walnuts.

Sift together the flour, soda, and salt, and mix them with the bran. Add the other ingredients and bake for 25 or 30 minutes in a hot oven in gem tins. This will make about 20 muffins.

Butter Honey Cake.

1½ cups honey.
½ cup butter.
3 egg yolks.
5 cups flour.
2 teaspoons ground cinnamon.
½ teaspoon salt.
1½ teaspoons soda.
2 tablespoons orange-flower water (water may be substituted).
Whites of 3 eggs.

Rub together the honey and butter, add the unbeaten yolks and beat thoroughly. Add the flour sifted with the cinnamon and the salt and the soda dissolved in the orange-flower water. Beat the mixture thoroughly and add the well-beaten whites of the eggs. Bake in shallow tins and cover with frosting.

Nut Honey Cake.

2 cups brown sugar.
2 cups honey.
6 egg yolks.
3 cups flour.
Speck of salt.
1½ teaspoons soda.
3 teaspoons ground cinnamon.
½ teaspoon ground cloves.
½ teaspoon gound nutmeg.
½ teaspoon allspice.
1 cup chopped raisins.
½ ounce citron cut in small pieces.
½ ounce candied orange peel cut in small pieces.
½ pound almonds coarsely chopped.
Whites of 3 eggs.

Mix the sugar, honey, and the yolks of the eggs and beat thoroughly. Sift together the flour, salt, spices, and soda. Combine all ingredients but the whites of the eggs. Beat the whites of the eggs till they are stiff and add them last. Pour the dough to the depth of about half an inch into well-buttered tins, and bake in a slow oven for one-half hour.

Hard Honey Cake.

¾ cup honey.
½ cup sugar.
2½ cups flour.
1 egg.
¼ teaspoon ginger.
1 teaspoon cinnamon.
½ teaspoon ground cardamom seed.
½ teaspoon cloves.
Speck white pepper.
Speck of salt.
½ teaspoon soda.
1 tablespoon water.
2 ounces blanched almonds cut into small pieces or chopped.

Sift together the flour and spices, dissolve the soda in the water, beat the egg, and combine all the ingredients. Beat or knead the mixture thoroughly. Cook a small sample. If it does not rise sufficiently, add a little more soda and honey; if it falls, add a little more flour. Roll out the dough to the thickness of about three-fourths of an inch and bake in a hot oven. When the cake is done, glaze it with a thick sirup of sugar and water, and allow it to dry in a slow oven or in some other warm place. While it is still warm cut it into long strips, or it may be left in one large cake to be cut into thin slices when served. This cake will become very hard on cooling and will not be soft enough to eat for several weeks, but will keep in good condition for an indefinite length of time.

Honey Charlotte Russe.

1 quart cream.
6 lady fingers.
½ cup delicately flavored honey.

Chill the honey by placing the dish containing it in a pan of ice water. Whip the cream and add it to the honey, mixing the two well. Line a dish with lady fingers and fill it with the honey and cream. Serve very cold.

Currants.

Bar-le-Duc currants, an article of commerce often made with honey, sell for a relatively high price, in part no doubt because of the large amount of labor involved in preparing them. The seeds are removed from the currants by a method which mutilates the fruit very slightly; the fruit is then preserved in honey or sugar sirup. Those who wish to take the time to preserve currants in this way will find that a convenient way to remove the seeds is to cut a small slit in the side of each currant and remove the seeds by means of a needle. After this is done, weigh the currants and take an equal weight of honey. Bring the honey to the boiling point, add the currants, and allow them to cook at the boiling point for two or three minutes, or until the skins are tender, being careful not to let the mixture boil violently, because this is likely to destroy the shape of the fruit. If the currants are so juicy as to liquefy the honey too much, they may be removed and the sirup reduced to the desired consistency, after which the currants may be replaced.

It is possible, of course, to preserve currants in honey according to the same recipe without the removal of the seeds, but the preserve thus obtained is not nearly so delicate as when the seeds are removed.

FOOD BEING WASTED.

Good Suet Thrown Away or Used for Soap Which Could Be Rendered and Used in Cooking.

Reports from some of the food specialists of the Department of Agriculture indicate that in certain sections there is a serious waste of a valuable food, due to the fact that many housewives do not appreciate the value of suet in cooking and do not know how to use it. As a result many throw good food suet into the garbage pail, or else in rare cases use it with meat trimmings for soap making. Many are unaware that suet possesses the same food value as lard, and if properly tried out is a satisfactory substitute for frying purposes, for shortening, and in making savory fats. Apparently some of the cookbooks have misled the American housewife by stating that suet is good only for soap making. In Europe, however, this food is carefully kept and rendered, and in Germany suet and lard are used interchangeably for frying and shortening.

Suet is the hard fat about the kidneys and loins in beef and mutton which corresponds to the fat of hogs from which leaf lard is made. Those who do not know how to render it object to the hardness of the suet and to its special flavor. Fresh suet, however, can be so rendered as to make a soft, usable fat, practically free from any distinctive flavor or odor.

The following is the simplest method for trying out suet:

Remove the skin and lean parts from beef fats and cut it into small pieces. Put it into a saucepan and cover it with cold water. Place it on the stove uncovered, so that the steam may carry off any disagreeable flavor. When the water has nearly all evaporated set the kettle back and let the fat slowly try out. When the fat has ceased bubbling and the scraps of skin are shriveled allow the scraps to settle at the bottom of the kettle, strain the fat through a cloth, and set it away to cool.

This fat is so valuable in cooking that housewives will do well to save all suet from their meat and try it out.

For those who want a mixture of suet and leaf lard the following recipe will be useful:

Take two parts of suet and one of leaf lard, finely ground, and mix together. Render this with whole milk in the proportion of one-half pint milk to 2 pounds of the mixed suet and lard. (Render means to melt down or to clarify by melting.) The suet and lard mixture may be finely divided by passing it through a meat grinder and may then be heated in a double boiler, when the fat will be quickly released from the tissues, and when allowed to cool will form a cake on the surface of the liquid which may be easily removed.

This fat has a good odor, color, and texture, and is softer than the suet alone. It is useful for frying and the shortening of foods with high flavors, and may be used with fair results in shortening such things as baking-powder biscuits. It is useful for cooking vegetables either alone or with the addition of a little butter.

Do Not Let Fat Burn in Cooking.

The unpopularity of fried food in many families is due entirely to the fact that the fat has been burned in cooking. Fat when heated to too high a temperature splits up and may form substances which have an irritating effect on the throat and may cause digestive disturbances. Fat in itself is a very valuable food and if it is not scorched should prove a healthful rather than an objectionable article of diet.

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Food Thrift Series—No. 5.

WHEATLESS MEALS.

Corn Meal as a Wheat Substitute—High Nutritive Value Justifies More General Use.

"Begin to-day to eat more corn meal and hominy grits in place of wheat flour and wheat breakfast foods" is the message the United States Department of Agriculture is sending out broadcast to housewives. "Try a wheatless breakfast to-morrow, and then extend the wheatless idea to other days or meals," the dietary specialists suggest.

To help the public use corn meal as a wheat substitute, the department has ordered large editions of Farmers' Bulletin 565, "Corn Meal As a Food and Ways of Using It," which will be sent on request to all who apply for it. This bulletin shows that corn-meal dishes can be made to take the place of those made of wheat, and supplies more than 50 tested recipes for its use for breakfast, luncheon, and dinner.

Corn, a great natural breadstuff of this country, the department's specialists point out, has not been used for human food nearly as much as its valuable nutritive qualities warrant. This is due largely to the fact that many persons with a wheat-using habit never have taken the pains to learn to use corn. There is no important dietetic difference between corn and wheat as sources of body fuel. Bread is convenient as a source of starch and protein, but in the ordinary mixed diet it makes little difference whether one gets the required cereal ration in the form of raised or light bread, mixed bread or biscuits, or as mush, hominy grits, or desserts.

To those who wish to try wheatless meals, the department suggests the following:

For a Wheatless Breakfast or Dinner.

As a substitute for wheat breakfast foods, try white or yellow corn meal or hominy grits, served with cream and sugar, butter, sirup, or fresh or dried fruit.

As a substitute for wheat biscuits, rolls, or toast, the housewife can employ a dozen different forms of corn bread, such as hoe cake, dodgers, soft or spoon corn bread, hominy bread, corn meal and rye Boston brown bread, Zuñi Indian bread, etc.

Fried corn-meal mush, fried hominy, or corn-meal pancakes, made with very little wheat flour, will be found a pleasing variation from wheat cakes.

Corn-meal codfish cakes, corn-meal scrapple, corn-meal croquettes, corn meal or hominy cooked with meat, fish, cheese, eggs, or milk, will supply nourishing dishes for the hearty courses.

Hominy grits and coarse hominy (sometimes called samp) may be boiled and used like macaroni or other wheat pastes to serve side dishes with meat.

For dessert, Indian pudding, corn-meal and fig or apple pudding, apple dumplings, corn-meal doughnuts, gingerbread, cake, fruit gems, etc., will contribute variety as well as nourishment to the bill of fare.

The housewife who wishes to substitute corn for some but not all of the wheat flour can make excellent raised or light bread, pancakes, waffles, muffins, rolls, graham-flour Indian bread, etc.

That wheat, rice, rye, oats, corn, and potatoes are largely interchangeable as sources of starch in the diet, is made clear in Farmers' Bulletin 808, "How to Select Foods: What the Body Needs."

"Many a Mickle Makes a Muckle."

AN OUNCE OF MEAT.

An ounce of edible meat—lean meat, fat and lean, suet or fat trimmed from steak, chop, or roast—seems hardly worth saving.

Many households take just this view of the matter—do not trouble to put such an insignificant scrap into the ice box or soup pot—do not bother to save for cookery a spoonful or two of drippings or a tiny bit of suet or fat.

Yet if every one of our 20,000,000 American families on the average wastes each day only 1 ounce of edible meat or fat, it means a daily waste of 1,250,000 pounds of animal food—456,000,000 pounds of valuable animal food a year.

At average dressed weights, it would take the gross weight of over 875,000 steers, or over 3,000,000 hogs—bones and all—to provide this weight of meat or fat for each garbage pail or kitchen sink. If the bones and butcher's waste are eliminated, these figures would be increased to 1,150,000 cattle and 3,700,000 hogs.

Or, again, if the waste were distributed according to the per capita consumption of the various meats (excluding bones), it would use up a combined herd of over 538,000 beef animals, 291,000 calves, over 625,000 sheep and lambs, and over 2,132,000 hogs.

Millions of tons of feed and hay, the grass from vast pastures, and the labor of armies of cattlemen and butchers also would be scrapped by this meat-waste route.

But every household doesn't waste an ounce of meat or fat every day? Very well; make it one out of a hundred families, but keep in mind that all meat allowed to spoil and all meat and fat rendered inedible by improper cooking, scorching, or burning must be counted as waste. Make it an ounce every other day or one a month. Such waste still would be unendurable when meat is scarce and when fat is of such vital food importance to many nations.

Waste of meat or fat is inexcusable. Every bit of lean meat can be used in soups, stews, or in combination with cereals; every spoonful of fat can be employed in cookery; every bit of drippings and gravy can be saved so easily and used to add flavor and nourishment to other dishes.

The United States Department of Agriculture, Washington, D. C., or your State agricultural college will tell you how to use bits of meat to make appetizing and nutritious dishes and how to use left-over fat in cookery.

HOME DRYING.

Scarcity of Cans or Glass Jars Makes Drying Desirable—How to Dry Vegetables.

Dry vegetables and fruits for winter use if tin cans and glass jars for canning are scarce or expensive.

This is the advice of specialists of the United States Department of Agriculture who recently have studied the possibilities of conserving food to meet war needs in spite of any difficulties that may be experienced in obtaining canning containers. Drying was a well-recognized and successful way of preserving certain foods before canning came into general use, the specialists point out, and modern methods make it still more practicable than formerly, either in the home or by community groups.

Methods of Drying.

Three methods of drying have been found by the department specialists to give satisfactory results. These are sun drying, drying by artificial heat, and drying with air blasts, as before an electric fan. Trays for drying by any one of these methods, as well as tray frames for use over stoves or before fans, can be made satisfactorily at home. Frames and trays for use with artificial heat may be purchased complete if desired.

Homemade trays may be made of side and end boards three-fourths of an inch thick and 2 inches wide and bottom boards of lathing spaced one-fourth of an inch. If desired, ¼-inch galvanized wire mesh may be tacked to the side and end boards to form the bottoms of the trays. Frames for use before fans may be made of wood of convenient size. Frames for use with artificial heat should be made of noninflammable material to as great an extent as possible. As many as six trays may be placed one above the other when artificial heat is used. In drying before a fan the number of trays that may be placed one above the other will depend, to a large extent, upon the diameter of the fan. In drying in the sun, trays as described may be used or the products to be dried may be spread on sheets of paper or muslin held in place by weights.

Preparing Products for Drying.

Vegetables and fruits will dry better if sliced. They should be cut into slices one-eighth to one-fourth of an inch thick; if thicker they may not dry thoroughly. While drying, the products should be turned or stirred from time to time. Dried products should be packed temporarily for 3 or 4 days and poured each day from one box to an-

U. S. DEPARTMENT OF AGRICULTURE,
WASHINGTON, D. C.

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other to bring about thorough mixing and so that the whole mass will have a uniform degree of moisture. If during this "conditioning" any pieces of the products are found to be too moist, they should be returned to the trays and dried further. When in condition the products may be packed permanently in tight paper bags, insect-proof paper boxes or cartons, or glass or tin containers.

Recipes.

Spinach and parsley: Spinach that is in prime condition for greens should be prepared by careful washing and removing the leaves from the roots. Spread the leaves on trays to dry thoroughly. They will dry much more promptly if sliced or chopped.

Beets: Select young, quickly grown, tender beets, which should be washed, peeled, sliced about an eighth of an inch thick, and dried.

Turnips should be treated in the same way as beets.

Carrots should be well grown, but varieties having a large woody core should be avoided. Wash, peel, and slice crosswise into pieces about an eighth of an inch thick.

Parsnips should be treated in the same way as carrots.

Onions: Remove the outside papery covering; cut off tops and roots; slice into one-eighth inch pieces and dry.

Cabbage: Select well-developed heads of cabbage and remove all loose outside leaves. Split the cabbage, remove the hard, woody core, and slice the remainder of the head with a kraut cutter or other hand slicing machine.

Beet tops: Tops of young beets in suitable condition for greens should be selected and washed carefully. Both the leaf stalk and blade should be cut into sections about one-fourth inch long and spread on screens and dried.

Swiss chard and *celery* should be prepared in the same way as beet tops.

Rhubarb: Choose young and succulent growth. Prepare as for stewing by skinning the stalks and cutting into pieces about one-fourth inch to one-half inch in length and dry on trays.

All these products should be "conditioned" as described.

Raspberries: Sort out imperfect berries, spread select berries on trays, and dry. Do not dry so long that they become hard enough to rattle. The drying should be stopped as soon as the berries fail to stain the hand when pressed. Pack and "condition."

Vegetables not needed immediately often are thrown out or allowed to spoil instead of being used in soups, salads, or combination dishes. Fruits are allowed to spoil which might be stewed and kept a day or two until needed.

The point has been reached where war is waged literally by whole nations. Every man, woman, and child is involved, and nearly every adult and most boys and girls can be efficient factors. We are in this war for the purpose of defending our rights, of making sure that, as a Nation, we shall be able to live the sort of life and to have the sort of institutions we desire, of making democracy persist in the world, and of safeguarding the world against the recurrence of such a war as this. To accomplish this, the Nation must aim at the perfection of organization, and therefore each individual must recognize the necessity of making sacrifices for the common good and more than ever of working under limitations—of doing teamwork. Our people have a genius for organization and they will not fail in the task they have assumed. Our farmers, on whom a great responsibility rests, are the most efficient farmers in the world when they do their best. They will not be found wanting in this crisis.—David F. Houston, Secretary of Agriculture, June 12, 1917.

CORN IN PLACE OF WHEAT.

To eat more corn and less wheat is a simple way, which everyone can adopt, to help in feeding the allies across the seas. Corn is a distinctly American product. We raise approximately two-thirds of all that is grown in the world; we are accustomed to it, and we know how to prepare it for the table. In Europe, with the exception of Italy, Austria-Hungary, and Roumania, it is almost unknown, and many people do not know how to cook corn meal and similar products. We can use our corn to much better advantage here than they can abroad; and the more corn we do use the more wheat, rye, and barley will be available for export.

Corn meal costs less than the other popular cereals, and its nutritive value compares favorably with that of wheat. It is somewhat deficient in protein or tissue-building material, but this characteristic is not so marked in the case of the old-fashioned unbolted meal. Those who prefer this can obtain it readily by grinding the corn themselves at home in a hand gristmill.

The Secretary of Agriculture has appealed for an expansion of the corn acreage on the ground that corn is the leading feed and food crop of the United States, and that it can be grown successfully over a greater area than any other. Undoubtedly farmers will act on this advice. If the consumers do their part as well, there will be that much more wheat available for export.

Detailed suggestions for the use of corn in making bread and in other ways can be had from the United States Department of Agriculture upon request.

In many households proper attention to the cooking and seasoning of cheap and nutritious foods will, by making them more appetizing, increase greatly their consumption and thus reduce considerably the use of more expensive foods now eaten instead.

COTTAGE CHEESE.

Some Ways to Use Cottage Cheese in Making Tasteful and Nutritious Dishes.

Cottage cheese is richer in protein than most meats and is very much cheaper. Every pound contains more than 3 ounces of protein, the chief material for body building. It is also a valuable source of energy, though not so high as foods with more fat. It follows that its value in this respect can be greatly increased by serving it with cream, as is so commonly done.

Cottage cheese alone is an appetizing and nutritious dish. It may also be served with sweet or sour cream, and some people add a little sugar, or chives, or chopped onion, or caraway seed.

The following recipes illustrate a number of ways in which cottage cheese may be served:

Cottage Cheese with Preserves and Jellies.

Pour over cottage cheese any fruit preserves, such as strawberries, figs, or cherries. Serve with bread or crackers. If preferred, cottage-cheese balls may be served separately and eaten with the preserves. A very dainty dish may be made by dropping a bit of jelly into a nest of the cottage cheese.

Cottage-Cheese Salad.

Mix thoroughly 1 pound of cheese, 1½ tablespoonfuls of cream, 1 tablespoonful of chopped parsley, and salt to taste. First fill a rectangular tin mold with cold water to chill and wet the surface; line the bottom with waxed paper; then pack in three layers putting two or three parallel strips of pimento between layers. Cover with waxed paper and set in a cool place until ready to serve; then run a knife around the sides and invert the mold. Cut in slices and serve on lettuce leaves with French dressing and wafers. Minced olives may be used instead of the parsley, and chopped nuts also may be added.

Cottage-Cheese Rolls.

A large variety of rolls to be used like meat rolls, suitable for serving as the main dish at dinner, may be made by combining legumes (beans of various kinds, cowpeas, lentils, or peas), with cottage cheese and adding bread crumbs to make the mixture thick enough to form into a roll. Beans are usually mashed, but peas or small Lima beans may be combined whole with bread crumbs and cottage cheese, and enough of the liquor in which the vegetables have been cooked may be added to get the right con-

sistency, or, instead of beans or peas, chopped spinach, beet tops, or head lettuce may be added.

Boston Roast.

1-pound can of kidney beans or equivalent quantity of cooked beans.	½ pound cottage cheese. Bread crumbs. Salt.

Mash the beans or put them through a meat grinder. Add the cheese and enough bread crumbs to make the mixture sufficiently stiff to be formed into a roll. Bake in a moderate oven, basting occasionally with butter, or other fat, and water. Serve with tomato sauce. This dish may be flavored with chopped onions, cooked in butter, or other fat, and a very little water until tender.

Pimento and Cottage-Cheese Roast.

2 cupfuls cooked Lima beans. ½ pound cottage cheese.	5 canned pimentos, chopped. Bread crumbs. Salt.

Put the first three ingredients through a meat chopper. Mix thoroughly and add bread crumbs until it is stiff enough to form into a roll. Brown in the oven, basting occasionally with butter, or other fat, and water.

Cottage-Cheese and Nut Roast.

1 cupful cottage cheese. 1 cupful chopped English walnuts. 1 cupful bread crumbs. 2 tablespoonfuls chopped onion.	1 tablespoonful butter. Juice of half a lemon. Salt and pepper.

Cook the onion in the butter or other fat and a little water until tender. Mix the other ingredients and moisten with the water in which the onion has been cooked. Pour into a shallow baking dish and brown in the oven.

Cheese Sauce.

1 cupful milk. 1 tablespoonful cottage cheese.	2 tablespoonfuls flour. Salt and pepper to taste.

Thicken the milk with the flour and just before serving add the cheese, stirring until it is melted.

This sauce may be used in preparing creamed eggs or for ordinary milk toast. The quantity of cheese in the recipe may be increased, making a sauce suitable for using with macaroni or rice.

For some reason boiled parsnips were long considered in some regions of Europe to be the proper vegetable to serve with salt fish, but this tradition is not followed in the United States, plain boiled or fried parsnips being commonly served with roast meats of any sort. They are also used for soups, fritters, etc.

HOME-MIXED FLOURS.

How to Use Bran, Corn Meal, Rice, or Rye Flour with Wheat Flour in Bread Making.

The use of flours which contain more or less bran is sometimes advisable both for the sake of the variety which they give to the diet and because of the mineral substances and growth-regulating substances these flours contain. Farmers' Bulletin 807 of the United States Department of Agriculture, "Bread and Bread Making," includes, in addition to white-bread recipes, a number for homemade bread from whole wheat or graham flour, from home-ground flour, from rye, etc. These are as follows:

Whole-Wheat or Graham Bread.

1½ cups lukewarm milk. 3 tablespoons brown sugar. 1½ teaspoons salt.	3 cups whole-wheat or graham flour. ½ yeast cake.

Scald the milk, together with the sugar and salt. When lukewarm, add the yeast, mixing it first with a little of the milk. Add the flour, beat well, and let it double its volume. Beat it thoroughly, put into a pan, and let it rise. In a pan of standard size it should come nearly to the top.

The above recipe may be used in preparing bread from home-ground meal. There are many homes, particularly in the country, where the housewife can obtain unground wheat at moderate cost. If ground in the ordinary coffee mill, such wheat makes a coarse bread, not very light in texture, but of such good flavor that it may well be used occasionally to give variety to the diet. It is useful, too, in places where good bran can not be obtained easily and where coarse breads are desired as a means of preventing constipation. In making such bread with a view to economy the housekeeper should compute what it will cost her per loaf, including labor and fuel, as compared with other breads she makes. Skim milk instead of whole milk can be used; homemade yeast, either liquid or dry cake, is a possibility, and some might like the bread with less sugar or unsweetened. Another recipe which has been worked out follows:

Home-Ground Wheat Bread.

1¼ cups water or skim milk. 1½ teaspoons salt. 1 tablespoon sugar.	3 cups home-ground wheat flour. ½ cake dry yeast, or 1 gill liquid yeast.

Set a sponge at night, using half of the flour. In the morning add the rest of the flour, beat well, put into a greased pan, allow to rise until it doubles its bulk, and bake.

Corn-Meal-and-Wheat Bread.

1½ cups milk, water, or a mixture of the two. ½ cake compressed yeast, or 1½ cups milk, water, or a mixture of the two. ¼ cup liquid yeast.	1½ teaspoons salt. 1 tablespoon sugar. Butter (if used), 1 tablespoon. 1 cup corn meal. 2 cups wheat flour.

Pour 1¼ cupfuls of the water over the corn meal, salt, sugar, and fat (if used), and heat the mixture gradually to the boiling point or nearly to it and cook 20 minutes. This cooking can best be done in a double boiler. The water is sufficient only to soften the meal a little. Allow the meal to cool to about the temperature of the room and add the yeast, mixed with the rest of the water (¼ cupful), or the ¼ cupful of liquid yeast. Mold thoroughly, let rise until it doubles its bulk, make into a loaf, place in a pan of standard size, allow to rise until it nearly fills the pan, and bake 45 or 50 minutes.

Rice Bread.

1 cup lukewarm water, milk, or a mixture of the two. 1 cup uncooked rice. 1½ teaspoons salt.	1 tablespoon sugar. Butter (if used), 1 tablespoon or less. ½ cake compressed yeast. 2 cups wheat flour.

Steam the rice with one-half of the liquid until it is soft. This is done better in a steamer than in a double boiler, for the liquid is so small in amount that the rice does not become soft readily and the presence of the steam helps. Put the sugar, salt, and fat (if used) into the mixing bowl and pour over them the remaining liquid (½ cupful). When the mixture has become lukewarm add the yeast and ½ cupful of flour. Allow this sponge to rise until very light. Add the boiled rice, which should have been cooled until lukewarm, and the rest of the flour. This dough is so thick that some pressure is required to work in the last portions of the flour. Allow the dough to rise until it has doubled its bulk, form into a loaf, place in a pan of standard size, allow it to rise until it nearly reaches the top of the pan, and bake.

Rye Bread.

1 quart milk. 2 tablespoons sugar. 4 teaspoons salt. 2 tablespoons butter.	1 cake compressed yeast. 3 cupfuls flour (1 cup being wheat and the remainder rye).

Follow the directions for making wheat bread according to the short process until after the bread has been molded the second time. At this point the dough should be placed in a 6-quart bowl lined with a cloth into which flour has been rubbed. When the dough has risen to the top of the bowl turn out on a hot sheet iron (a dripping pan inverted will do), over which 1 tablespoonful of flour has been sprinkled, and put it immediately into a very hot oven. After 10 minutes lower the temperature somewhat and bake for 1 hour. This recipe is a modification of an old German household method of making rye bread.

REDUCING BREAD COST.

By Baking Bread at Home Housewives Should Be Able in Many Cases to Reduce Expense.

By the home baking of bread—the largest single item in the diet in almost every household—housewives should be able in many cases to reduce expenditures for food, sa · specialists of the United States Department of Agriculture. The making of this important food in the home is a relatively simple process, the specialists point out. Even housewives not accustomed to home baking should be able to produce satisfactory results by using the following simple recipes of the department.

White Wheat Bread, Short Process.

For one loaf of bread pour one cup of boiling water, scalded milk, or a mixture of the two, into a mixing bowl over one teaspoonful salt, one tablespoonful sugar, and one tablespoonful lard or other fat, if fat is desired. Allow the mixture to cool until it is lukewarm. Mix one-half cake compressed yeast with a little of the lukewarm liquid and pour it into the other mixture. If liquid yeast is substituted for the compressed sort, the ingredients should consist of one-fourth cup of yeast, three-fourths cup milk, water, or milk and water mixture, and the quantities of the other substances already mentioned.

If convenient, set the mixture of yeast, liquid, salt, sugar, and fat aside in a warm place, not over 86° F., for an hour, before adding the flour. If not convenient to set the mixture aside, add the flour at once, putting in a little at a time and kneading until the dough is of such consistency that it sticks neither to the bowl nor to the hands. This requires about 10 minutes. After the flour is added, cover, and allow to rise one and three-fourths hours at a temperature of 86° F.; it may be better to set it at a lower temperature, but the lower the temperature the longer the tim· required for the rising. Cut down the dough from the sides of the bowl; grease the hands slightly. Knead a little and set aside to rise again for an hour. With a good bread flour the dough should treble its bulk in each rising. With a soft wheat flour, it should not rise much beyond twice its volume. Divide into portions, mold, and place in greased pans of standard size (1½ quarts). Allow to rise until a light touch will make a slight dent. With good bread flour this happens when the dough reaches the top of the pan. Bake 50 minutes.

Short Sponge Method.

The short sponge method requires setting for a considerable period. All ingredients are the same as for the short process, but only half the flour is added at first. When the resulting mixture, which is called a "sponge," is so light that it will fall at the slightest touch, the rest of the flour should be added.

Overnight Sponge Method.

Use the same proportions as for the short process, except in the case of the yeast, which should be one-eighth cake of compressed yeast or 2 tablespoonfuls of liquid yeast for each loaf. Use water rather than milk. In the evening mix the yeast with water, salt, and half of the flour, and beat thoroughly. Cover and place at a temperature of 65° to 70° F., or that of an ordinary room. In the morning add the sugar and the rest of the flour and proceed as in the case of the short process.

Overnight Straight-Dough Method.

Use the same ingredients as for the overnight sponge method, but put in all the ingredients at night.

Mixed Wheat-Flour Breads.

The recipes given above for white bread can be followed in making bread out of part graham and part white flour. The usual proportions are either one part of graham to two parts of white, or half graham and half white. In all cases, however, white flour should be used for making the sponge. In place of the sugar an equal amount of molasses may be used. Such bread will not rise quite as much as bread made of white flour only.

Whole-Wheat or Graham Bread.

1½ cups lukewarm milk.	3 cups whole-wheat or graham flour.
3 tablespoons brown sugar.	½ yeast cake.
1½ teaspoons salt.	

Scald the milk, together with the sugar and salt. When lukewarm, add the yeast, mixing it first with a little of the milk. Add the flour, beat well, and let it double its volume. Beat it thoroughly, put into a pan, and let it rise. In a pan of standard size it should come nearly to the top.

The above recipe may be used in preparing bread from home-ground meal. There are many households, particularly in the country, where clean whole wheat can be obtained at moderate cost. If ground in the ordinary coffee mill, such wheat makes a coarse bread, not very light in texture, but of such good flavor that it may well be used occasionally to give variety to the diet. It is useful, too, in places where good bran can not be obtained easily and where coarse breads are desired as a means of preventing constipation.

In making such bread with a view to economy the housekeeper should compute what it will cost her per loaf, including labor and fuel, as compared with other breads she makes. Skim milk instead of whole milk can be used; homemade yeast, either liquid or dry cakes, is a possibility, and some might like the bread with less sugar or unsweetened. Another recipe which has been worked out follows:

Home-Ground Wheat Bread.

1¼ cups water or skim milk.	3 cups home-ground wheat flour.
1½ teaspoons salt.	½ cake dry yeast or 1 gill liquid yeast.
1 tablespoon sugar.	

Set a sponge at night, using half of the flour. In the morning add the rest of the flour, beat well, put into a greased pan, allow to rise until it doubles its bulk, and bake. (For particulars as to setting the sponge, etc., see directions for making wheat bread.)

CHICKEN FAT VALUABLE.

Do you throw away the body fat of poultry—big layers of clean, sweet, yellow fat around the gizzard and found elsewhere around the intestines of the chicken? If you do, say specialists of the United States Department of Agriculture, you are throwing away fat which French housewives consider the finest of fats for making cakes and especially puff paste. In certain seasons in New York and other big cities this fat is so highly esteemed that it brings as much as $1.10 per pound. So great is the demand for this fat that many people make a business of collecting it from butchers and others who dress poultry before delivering it to customers. Housewives would do well to insist on having it delivered if they buy their poultry dressed. By using chicken fat in cooking they can cut down the amount of fat they must buy for that purpose. To prepare it, try it out in a double boiler or other vessel set in hot water until the fat just melts away from the tissues and can be poured off. This fat becomes rancid easily and should be kept cool and covered like butter, and used in a very few days. Chicken fat, like goose fat, may be used for shortening in cakes, such as spice cake, where the seasoning used will mask any flavor which the fat might have. It can also be used for frying the chicken itself or other meats and for warming vegetables, etc.

DON'T USE RHUBARB LEAVES.

Because rhubarb leaves contain certain substances which make them poisonous to a great many persons, specialists of the United States Department of Agriculture warn housewives against using this portion of the plant for food. A number of letters have been received by the department calling attention to the fact that certain newspapers and magazines are advocating the use of rhubarb leaves for greens, and that disastrous results have followed the acceptance of the advice.

HOW TO SELECT FOODS.

Grouping of Foods to Effect Economy and Insure Proper Diet—Those in a Group Are Interchangeable.

If the housewife will group the various foods in her pantry, vegetable bins, and refrigerator, into five simple groups and will see that foods from each of the groups appear in each day's meals, she can feel sure that she is giving her family the eight different substances which the body needs for well-being. This grouping will help the housekeeper who wishes to save money or time to simplify her meals without making them one-sided or incomplete. It will enable her to determine whether the meals supply all the different materials needed and will prevent substituting one food for another which has an entirely different use.

To help the housewife group foods in a simple and effective way, the nutrition specialists of the United States Department of Agriculture have published the following suggestive grouping in Farmers' Bulletin 808, on how to select foods.

Group 1.—Fruits and Vegetables.

Without these the food would be lacking in mineral substances needed for building the body and keeping it in good working condition; in acids which give flavor, prevent constipation, and serve other useful purposes; and in minute quantities of other substances needed for health. By giving bulk to the diet they make it more satisfying to the appetite.

Foods depended on for mineral matters, vegetable acids, and body-regulating substances.

FRUITS.	VEGETABLES.
Apples, pears, etc.	Salads—lettuce, celery, etc.
Berries.	Green peas, beans, etc.
Oranges, lemons, etc.	Tomatoes, squash, etc.
Bananas.	Potherbs, or "greens."
Melons, etc.	Potatoes and root vegetables.

Group 2.—Meat and Meat Substitutes.

These are sources of an important body-building material—protein. In the case of children part of the protein food should always be whole milk.

Foods depended on for protein.

Milk, skim milk, cheese, etc.	Fish.
Poultry.	Dried peas, beans, cowpeas, etc.
Eggs.	Nuts.
Meat.	

Group 3.—Foods Rich in Starch.

Cereals (wheat, rice, rye, barley, oats, and corn) and potatoes (white and sweet). Cereals come near to being complete foods, and in most diets they supply more of the nourishment than anything else. It is not safe, however, to live only on cereals.

Foods depended on for starch.

Cereal grains, meals, flours, etc.	Crackers.
Cereal breakfast foods.	Cakes, cookies, starchy puddings, etc.
Bread.	Potatoes and other starchy vegetables.
Macaroni and other pastes.	

Group 4.—Sugar.

Unless some of the fuel is in this form the diet is likely to be lacking in flavor.

Foods depended on for sugar.

Sugar.	Candies.
Molasses.	Sweet cakes and desserts.
Sirups.	Fruits preserved in sugar, jellies, and dried fruits.
Honey.	

Group 5.—Foods Very Rich in Fat.

These are important sources of body fuel. Without a little of them, the food would not be rich enough to taste good.

Foods depended on for fat.

Butter and cream.	Salt pork and bacon.
Lard, suet, and other cooking fats.	Table and salad oils.

Some food materials really belong in more than one group. Cereals, for example, supply protein as well as starch; potatoes supply starch as well as the mineral matters, acids, cellulose, and body-regulating substances, for which they are especially valuable; and most meat supplies fat as well as protein. The lists given above show some of the common food materials arranged in these five groups, according to their most important nutrients. Thinking of foods as belonging to these groups should help to prevent two mistakes—that of serving meals that have not sufficient variety and that of cutting down in the wrong places when economy either of time or money is needed.

The groupings will help the housekeeper who wishes to save money or time to simplify her meals without making them one-sided or incomplete. For example, from these groups, the housewife who has been serving bread, potatoes, and rice or hominy in one meal, will see that one or even two may be left out without omitting any important nutrient. They will show her that a custard which is made of milk and eggs, two foods from group 2, would hardly be needed after a meal in which a liberal supply of meat had been served, and that a child does not need milk at the same meal with an egg or meat. It will suggest that baked beans or other legumes or thick soups made of legumes are substitutes for meat rather than foods to be eaten with meat.

If, by studying these groups, the housewife finds that she has provided tissue-building protein (group 2), and the necessary though small amount of tissue-building minerals and body-regulating materials (group 1) she may safely build up the bulk of the diet from any materials from the other groups that seem economical, wholesome, and appetizing.

This method of planning prevents substituting one food for another which has an entirely different use. In general, economy within each group is safer than using an inexpensive food from one group in place of an expensive one from another group.

FRUIT JUICES FOR JELLY.

May Be Sterilized and Bottled without Sugar and Made into Jelly at Housewife's Convenience.

Fruit juices for use later in jelly making can be sterilized and bottled without sugar and made into jellies at the housewife's convenience. This enables her to do with fewer jelly glasses and to distribute her purchases of sugar for jelly making through the year. Moreover, with the bottled juice she can make a greater variety of jellies, as juices which will not jell can be put up when the fruit is ripe and combined later with fruits that will jell, or fruits ripening at different seasons can be combined. For example, the juice of strawberries, cherries, or pineapple can be kept without sugar and later when apples are plentiful can be made into combination jelly.

From the unsugared sterilized juices of currants, apples, crabapples, and grapes, kept from 9 to 18 months, the Bureau of Chemistry, United States Department of Agriculture, recently made jellies of excellent texture, flavor, and color.

To put up unsugared fruit juices for jelly making proceed exactly as if jelly were to be made at the time. Cook the fruits until they are soft and strain out the juice through a flannel bag. Heat and pour while hot into bottles previously scalded. Fill the bottles full, leaving no air space between juice and cork or seal. Place the filled sealed bottles on their sides in water near the boiling point, and keep them in the bath for about 30 minutes. Make sure that the corked or sealed end is under the hot water. As soon as the bottles are cool cover the cork with a paraffin seal. Thorough sterilization and sealing are absolutely essential to success.

To make jelly from the sterilized juice, test its jelling quality, add the proper amount of sugar, and proceed as in making jelly from freshly expressed juice.

Skim milk, too widely looked down upon as a food, although it contains practically all the nourishing elements of whole milk with the exception of the cream or fat, can be used as a beverage, in cooking cereals, or as a basis for milk soups or sauces. Sour milk also, so often thrown away, can be used in making hot breads or in the home manufacture of cottage cheese.

FOOD WASTE AT HOME.

Housewife the Chief Factor in the Conservation of the Nation's Food Supply—Helpful Suggestions.

One dollar out of every five that is spent for food is thrown away in some American households. In the majority it may be only one out of every ten or twelve, but in almost every home the waste is an important item in the cost of living. Investigators have estimated it as ranging from practically nothing to 20 per cent of the food purchased, with 7½ per cent as a mean value. Few housewives probably have any idea of what it amounts to in their own homes, but there are fewer still who could not reduce it if they would.

Ordinarily the process of wasting begins with the purchase of food. It is not uncommon, for example, for the housewife to want the butcher to trim off the fat and bones which were nevertheless included when the meat was weighed and for which he has charged his customer. Since these have to be paid for, the economical housewife will see that they are taken home and used. The bones should go into the soup pot and the fat can be utilized for cooking and thus made to reduce the amount of fat which must be purchased specially for that purpose and which in many households is a considerable item in the year's food bill.

Another cause of wasteful buying is the erroneous idea that the value of foods as food is in some way determined by the price. As a matter of fact, the nutritive value of an article of food and its price seldom have any relation to each other. An expensive cut of beef is not necessarily any more sustaining than a cheap one. It usually tastes better, or can be cooked by easier methods. To buy it deliberately for these qualities does not necessarily mean waste of money, but if one is looking for nutriment, not flavor or convenience, the purchase of the expensive cut is often unwarranted extravagance. Care in cooking and seasoning moreover, will make inexpensive meats attractive and much better than costly ones poorly prepared.

With fruits and vegetables the price is often determined by the season. A vegetable out of season is much more expensive than one in season, but it is no more nutritious. In order to purchase to best advantage, the housewife should understand such things and should also be familiar with general market conditions. If she can choose between going to market in person and ordering by telephone or at the door, she should know whether in her particular circumstances the convenience of the latter makes up for the possibly better prices and quality to be obtained by the former method. She should, further, know whether the saving often effected by buying in bulk is likely to be offset or not by spoilage and waste in the home. If she has no adequate storage facilities it may often be wiser to buy in small quantities. Furthermore, when this is done, there is no doubt that there is less temptation to be unduly lavish with the article in question.

Once the food is in the house, it is important that all that is edible be eaten. The peeling of potatoes, for example, seems a small thing, but it has been estimated that 20 per cent of the flesh of the potato is often lost in the process. Not only are many other vegetables and fruits wastefully pared, but in many cases the tops or outer leaves are thrown away, although they could be used as greens, to flavor soups, and in other ways.

One of the articles of food with which the waste is greatest is bread. In almost every household quantities of this are "left over" every day. Frequently they are put into the garbage pail; more rarely they are made into bread pudding or a few are used in scalloped dishes or in similar ways. It is not generally known, however, that dried bread can be ground in a coffee mill or food chopper and used in place of part or all of the flour called for in gingerbread, and cookies, pancakes, and biscuits, or in thickening soups, sauces, etc. This fact has long been familiar to commercial bakers and there is no reason why the housewife should not practice the same economy that they do.

The serving of excessively large helpings usually springs from a mistaken idea of generosity. As a matter of fact, however, a great many of us probably often eat more than we need or really want rather than leave food on our plates. And it is always possible by giving another helping to satisfy anyone who is really hungry without forcing on the others more than they care for. This does not mean that it is good economy for the housewife to supply her family with less than it actually needs. That would be a sign of very poor management or else of desperation.

The number of calories and the amounts of nutrients contained in stated quantities of different kinds of food have been worked out by scientists and afford a basis for comparing the nutritive value of various dishes. The matter is so complicated that the ordinary housewife probably has neither the time nor the inclination to make a mathematical calculation of the nourishment her meals afford. It will, however, help her to know that by observing a few fundamental principles she can alter her bills of fare to suit changing conditions at home or in the market without any risk of underfeeding the family. First among these is the fact that an adequate diet should contain articles from each of the five groups into which the common food materials may be divided.

These are: (1) Vegetables and fruits, which supply acids and other substances that the body needs to keep it in proper working order, as well as some building materials and energy; (2) meats, fish, eggs, milk, legumes, etc., in which the proportion of protein to other substances is high in comparison with the other groups; (3) starchy foods like potatoes, rice, flour, and other grain products, etc., which furnish much energy and some protein and mineral matters; (4) foods rich in sugar, an excellent source of body fuel, the pleasant flavor of which makes the diet more attractive; and (5) the fats, like butter, bacon, cream, lard, etc., which are valuable sources of energy.

No one of these groups can profitably be omitted altogether. It is nevertheless possible to avoid from a nutritive point of view a useless wasts of money by selecting, first, the cheapest articles in each group; and second, by substituting to a certain extent articles from a cheaper group for those from a more expensive. In particular the grain foods in group 3 may be used more extensively than is common in many households, and the use of the higher-priced ones in group 2 may be correspondingly decreased. The grains furnish protein as well as energy, and in a cheaper form than meat. By combining them with a little meat the meat flavor is secured and a dish as nutritive but much less expensive than meat alone obtained. This does not mean that all animal foods or even all meats should be cut out of the diet entirely. As far as can be judged, in the light of our present knowledge, the body is most likely to keep in health if it obtains its protein from a variety of sources, including milk (especially in the case of children), eggs, meat, etc. Similarly, dried fruits contain not only the characteristic properties of foods in group 1, but sugar as well, and a liberal use of them will provide in an economical form much of the sugar which the palate craves.

The housewife, too, who understands these and similar facts in regard to the composition and uses of food will be able to free herself from many existing prejudices. Skim milk, for instance, is regarded by many persons as unfit for human use. As a matter of fact, it contains practically all of the constituents of whole milk except the fat taken off in the cream. On farms it is frequently fed to live stock, but in many cases it might be more economical to use it in the household. If it is considered too thin for drinking, it may be used in cooking, as in making soups, mixing bread, or cooking cereals.

These are merely suggestions. A hundred others will occur to the woman who really wants to plan her meals efficiently. Waste means the failure to make full use of everything that is bought or raised. To avoid it takes skill and knowledge and in most cases time and trouble as well. Cheap foods and "left overs" can not be made attractive as easily and as quickly as high-priced supplies fresh from the dealer. This is one reason why some foods are cheap. The more the housewife can rely on her own skill and labor to make her meals nutritious and attractive, the less money she will have to give for expensive materials and help.

MAKE COTTAGE CHEESE.

How to Use Skim Milk in the Production of a Nutritious Food—Good Substitute for Meat.

Cottage cheese furnishes a convenient and economical means of using skim milk as human food. It can be easily made on a small scale and requires no special equipment. The cheese is nutritious and is an excellent substitute for meat. Each pound of cottage cheese furnishes as much protein or body-building material as the same weight of beef. It is, however, not quite so rich in its energy supply as meat.

Because of its ease of making it is desirable to make the cheese often, so that it may be eaten fresh, although if it is kept cool it will not spoil for several days. The following directions have been prepared by the Dairy Division, United States Department of Agriculture.

The Method of Making.

Setting.—Select as much good skim milk as will be needed for a two or three days' supply. Each gallon of skim milk will make about 1½ pounds of cheese. The skim milk should first be placed in a pail or shotgun can, warmed to 75° F., and allowed to stand at that temperature until curdled. A thermometer should always be used; never guess at the temperature. The temperature can be controlled by keeping the pail or can of milk in a tub, sink, or other vessel filled with water of the same temperature. The time required for curdling will depend upon the freshness of the milk. When a starter or good sour milk is available a better and more uniform cheese can be made and the time for curdling lessened. About a cupful of starter or good sour milk per gallon of skim milk is sufficient, although more may be used. With that quantity of starter the skim milk will curdle in from 10 to 15 hours, while without a starter fresh milk may not curdle for 24 hours, or even longer. The greater the quantity of starter the sooner curdling will take place. During the setting no special attention is necessary. As soon as a firm, smooth curd has been formed, it is ready for cutting.

Cutting, heating, and stirring.—The curd is cut into 1-inch or 2-inch squares with a long-bladed knife. The temperature of curdled milk (or coagulum) is then raised to 100° F., and the mass stirred gently from time to time. When that temperature has been maintained for about half an hour the curd is ready to be drained. The degree of heating largely determines the dryness of the cheese; the higher the temperature the drier the cheese will be.

"Many a Mickle Makes a Muckle."

A PAT OF BUTTER.

One pat or serving of butter is a little thing—there are about 64 of them in a pound.

In many households the butter left on the plates probably would equal one pat, or one-fourth of an ounce, daily—scraped off into the garbage pail or washed off in the dish pan.

But if every one of our 20,000,000 households should waste one-fourth of an ounce of butter daily, on the average, it would mean 312,500 pounds a day—114,062,500 pounds a year.

To make this butter would take 265,261,560 gallons of milk—or the product of over half a million cows.

But butter isn't eaten or wasted in every home, some one objects. Very well. Say only 1 in 100 homes wastes even a pat of butter a day—over 1,000,000 pounds wasted. Still intolerable when butter is so valuable a food and every bit of butter left on a plate is so useful in cookery.

The United States Department of Agriculture, Washington, D. C., or your State agricultural college will tell you how to use every bit of butter in cookery.

Draining.—After heating, the curd is poured into a cheesecloth sack or a piece of draining cloth thrown over a pail. If a pail is used it will be necessary to pour out the whey occasionally, so that draining will continue. In 15 or 20 minutes the curd will become mushy and will drain more slowly. The sides of the cloth may then be raised and lowered every few minutes to hasten draining. When the curd is rather firm and the whey has nearly ceased to flow it is ready for salting, although tastes differ somewhat, some preferring a dry while others prefer a soft, moist cheese.

Salting.—The cheese should be salted to suit the taste. Usually, however, from 1 to 2 teaspoonfuls per gallon of milk is about the quantity desired. The salt may be sprinkled over the curd and worked in with a spoon or paddle. The cheese is then ready to eat. If kept several days it should be stored in an earthenware or glass vessel rather than one of tin or wood. The cheese should be stored in a cold place, as it will keep longer without becoming sour or moldy.

Cottage cheese made with rennet, a junket tablet, or pepsin has a finer and more uniform texture and requires less time and attention in making. Any one of these will cause the milk to curdle sooner. The process of making is the same, except that 4 to 5 hours after the skim milk is set at 80° F., 2 or 3 drops of liquid rennet per gallon of milk are diluted in a tablespoonful of cold water and stirred into the milk. When rennet is not available, one-eighth of a junket tablet per gallon of milk may be dissolved in a tablespoonful of cold water and stirred into the milk. Powdered pepsin may be used for the same purpose, a quantity that will remain upon the point of a penknife being dissolved in a tablespoonful of cold water and then mixed with the milk. When rennet, junket tablet, or pepsin is ued the coagulum is placed in a drain cloth without cutting or heating. A finer and heavier draining cloth is necessary because of the fineness of the curd. The cheese is salted as described.

Sweet or sour cream added to cottage cheese makes a richer and more palatable product.

While for small-scale operation the pasteurization of skim milk may not always be practicable, it permits a better control of the fermentation, increases the yield of cheese, and renders the product safe from disease-producing organisms. With pasteurized milk it is absolutely necessary to use a starter.

Cottage cheese is judged by its flavor and texture. A high-quality cheese should have a clean, mild acid flavor and a texture smooth, free from lumps, and uniform or homogeneous throughout. Flavor can be controlled by the use of clean, sweet skim milk and a good starter, but texture largely depends upon careful manipulation during the making process.

EAT MORE CORN.

The Most Effective Substitute for Wheat at Our Disposal.

Ordinarily the quantity of corn produced in the United States is from three to four times the quantity of wheat, but only a very small portion of the crop—from 5 to 10 per cent—has been used for human food. This amount may be estimated in normal times at about 200,000,000 bushels a year. Not over 5 per cent has been exported in peace times. A relatively slight increase in the corn acreage, therefore, will place many millions of bushels more of human food at the disposal of the world without interfering in any way with the feed needed for the support of live stock.

In the past, with an abundance of grain of other kinds, corn has not been in great demand for human consumption. But with other grains no longer abundant, circumstances will compel more general recognition of the value of corn as human food. The department is urging strongly the wider use of corn in the diet. It is the best substitute for wheat that we have and can be utilized in breads, mushes, and a variety of other ways. We should make every effort to avail ourselves of it.

Vegetables properly prepared tempt the appetite. When they are soggily cooked or poorly seasoned, much of them will be left on the table.

DON'T LET MILK SPOIL
ON THE FARM, IN TRANSIT, OR IN THE HOME

Whole milk, skim milk, and buttermilk are highly nourishing and valuable foods. These foods spoil quickly when allowed to get warm or when exposed to bacteria and molds present in the dust and the air.

Keep Milk Continuously Clean, Cold, and Covered

This injunction applies equally to the producer, the wholesaler, the dealer, and the consumer.

Unclean milk sent from the farm sours and spoils more quickly than clean milk. Pasteurization makes milk safer.

Milk, to keep properly, should never get warmer than 50° F. until it is consumed. The lower the temperature the better the milk will keep.

Bacteria—such as those which cause milk to sour—develop very slowly and cause little change in milk kept at such low temperatures.

A slight rise in temperature, even for a short time, permits these bacteria to multiply rapidly and bring about rapid deterioration of the milk, which may render it unfit for ordinary use.

Don't leave your milk bottles on a hot porch or doorstep. A short exposure in the sun or a warm place hastens the spoiling even of cold, bottled milk.

Have the milkman put your milk into the refrigerator. If this is impossible provide, in warm weather, a box with ice, or a bucket of water in a shady place, for the milk.

At any rate, have the bottles left in the coolest and shadiest place about your premises.

Don't leave milk in bottles or vessels in a warm room for a moment longer than is necessary.

Never pour milk, which has been exposed to the air, back into a bottle containing other milk. Keep such milk cold and covered in another clean utensil.

Keep Milk Clean

Milk, when warm, is an ideal cultural medium for bacteria. Keep milk clean. You can keep it clean only by keeping it covered so that the bacteria and molds from the air will not get into it.

Keep your milk bottles covered either with caps or by placing glasses over them. Keep them covered in the refrigerator and in the kitchen or dining room.

Never pour milk into an unsterile bowl or pitcher. Scald all vessels into which milk is poured for keeping or serving. Cool these utensils after scalding, before you put milk into them.

Before you open a bottle of milk, wash and wipe the outside of the cap with water and a clean cloth. The little depression at the top of the bottle collects dust or water, or milk, which may attract flies. Lift out the cap with a pointed instrument, so that the outside of the cap, which may be contaminated, will not be pushed down into the milk.

Clean and scald the refrigerator where milk is stored, regularly with hot sal-soda solution. See that the drip pipe is kept open and clean.

Even in the cleanest refrigerator, never keep milk in an open vessel. Milk absorbs odors easily.

If there are babies or little children in your home, clean, cold, covered milk is absolutely essential.

Clean Empty Bottles

Finally, clean empty bottles. Rinse thoroughly with cold water every milk bottle, as soon as emptied, and then wash with hot water. This helps your milkman to give you clean milk.

Never take milk bottles into a sick room. If you have an infectious or contagious disease in your home, boil the milk bottles, and do not return them without the express sanction of your local health officer or attending physician.

Don't Throw Out Skim or Sour Milk

Clean skim milk is a valuable food, containing all the nourishing elements of whole milk except the fat or cream. It is useful in cooking cereals, soups, sauces, cocoa, etc., and is a palatable, nourishing beverage.

Sour milk and buttermilk can be used with soda in making hot breads, or sour milk can be easily turned into cottage cheese, or clabber. Sour cream is a good shortening for cakes and cookies, and is useful for salad dressings and gravies for meat.

The U. S. Department of Agriculture will be glad to send you additional information about the care and use of milk.

DEMONSTRATE THRIFT IN YOUR HOME
MAKE SAVING, RATHER THAN SPENDING, YOUR SOCIAL STANDARD

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